

# THE SCHOOL JOURNAL

NEW YORK AND CHICAGO.

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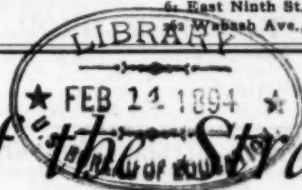
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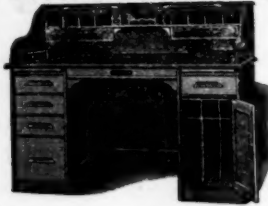
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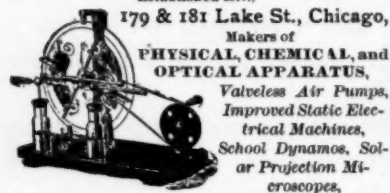
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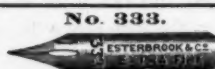
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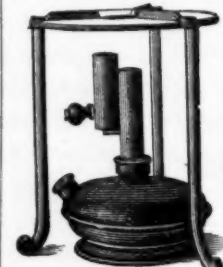
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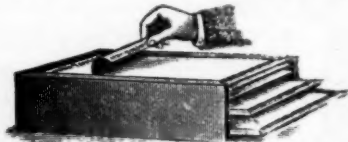
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A Weekly Journal of Education.

Vol. XLVII.

For the Week Ending September 23

No. 11

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The business department of THE JOURNAL is on page 276.

All letters relating to contributions should be addressed plainly, "Editors of SCHOOL JOURNAL." All letters about subscriptions should be addressed to E. L. Kellogg & Co. Do not put editorial and business items on the same sheet



CHANGE has taken place in the streets in the morning hours of these beautiful September days. On Monday, the 11th, there was seen issuing from nearly every house, neatly clad children; they were joyous and earnest. How different from the tone of last week! Then they had no care for the future; now they are aiming to enter upon some valuable and important work; they "mean business," to use a commercial phrase. One hundred and fifty thousand strong is this army that is to attack ignorance and unhappiness and human perplexity by means of acquiring knowledge and improving the judgment, and training the feelings. Success to you, brave army; success to you, O teachers!

Is the teacher a leader? Three years ago a young man left the Union Theological seminary of this city, and with twenty sermons started for a town in Minnesota where a preacher was called for. After six months he discovered that they needed a "leader" in thought; it was a new discovery for him. He concluded that his sermons were not such as a "leader" would preach, and began to give study to the ways and means of becoming a "fisher of men."

His letter, as it appears in a religious paper, is interesting and refreshing—it portrays so exactly the conversion needed in most teachers. We may suppose a young man from a normal school to have entered that same town three years ago; that he aimed to hear lessons, and finally to have discovered he must be a "leader" of the young beings entrusted to him. A learner of lessons simply becomes a lesson learner.

A training school was visited; it required but a short time to see that no consistent scheme of pedagogy existed in the teacher's mind. When teaching arithmetic and reading, as she did before promotion to this place, she must have had some definite scheme; she must have aimed at some specific knowledge or power in those classes. Now in her training classes the case is different. There is aimless wandering hither and thither. She has made no careful study of pedagogy herself, and does not know what to do. A page was read from a book of little value because it contained generalities, and then followed "talks." The girls, aged 16-20, had only general views, and to these more general views were added. Suppose a pupil should ask the teacher what are, say, ten foundation principles? What are ten essentials in methods? Who are the ten leading educators? What are ten cardinal points in school civics? What could she say?

To the request from a subscriber that some suggestions be made as to plans for the coming year, THE JOURNAL can put in a few words that will be a just maxim for his entire life: "*Get on a higher plane of thought and action.*" Last summer while in the Adirondacks, a party lost its way in a dense forest; the guide sought out the tallest hemlock tree, and climbed to its utmost top, for a survey of the country. He came down knowing the way to take. The advice then is, "Climb up." There is no teacher that can say, "I have it all;" there is no teacher who has studied the subject of education much but must say, "It seems to have measureless depths." To go on just as he did last year would certainly be a wrong to the pupil and himself.

The study of psychology, that has been taken up by so many teachers, must eventually lead to a study of philosophy; they are closely related. There are questions the teacher will be asked by pupils that can be answered justly only by those who have given some thought to the underlying strata of principles that must govern human action. A young lady graduate from a normal school in New York state found herself so destitute of clear views that she felt obliged to spend two years more to know where she stood. It is altogether in the bounds of reason that the equipment of the "coming teacher" will include some knowledge of philosophy.

What is the measure of our duty? Is it not *the measure of our ability*? Has the wise father a larger duty than the ignorant? Should the banker give his family more of comfort and advantage than the shipping clerk? Is the man who sees opportunities of helping humanity and passes them by as little culpable as he who does not see them? Does a higher mental caliber carry with it a higher moral responsibility? These are pertinent questions for teachers.

An agent of this paper says: "I was at an institute and the manager of another paper was saying, 'Yes, that is a good paper but it shoots over the heads of common teachers.' 'Then it is just what I want,' said a young lady. 'I am one who wants something that shoots above common teachers; I want to be an uncommon teacher.'" Look out for those who want to give you "pap" in an educational paper.

I have seen manners that make a similar impression with personal beauty; that give the like exhilaration, and refine us like that; and, in memorable experiences, they are suddenly better than beauty, and make that superfluous and ugly. But they must be marked by fine perception, the acquaintance with real beauty. Then they must be inspired by the good heart. There is no beautifier of complexion, or form, or behavior, like the wish to scatter joy, and not pain, around us.—*Emerson*

## Waste of Time During Recitations.

By an Ex-TEACHER.

Since I have been free to visit schools, I have been reminded by other teachers of my own sins of the past. One of these is needless waste of time and one of the most prevalent methods of wasting time, as far as I have observed, is the teacher's pet system for conducting recitations.

I remember thinking I had invented something valuable when I struck the following plan for a recitation in silent arithmetic:

1. The class took down a single example and set to work upon it, passing to the line as fast as they completed the solution and holding their slates religiously behind their backs. (My nerves respond uncomfortably still to the thought of the forbidden contact of wall and slate that became audible whenever the quick pupils grew absent-minded with waiting for the slow ones.)

2. When about two-thirds of the class had passed to the line I began to hurry up the laggards. A little later, the plodders, whether their solutions were completed or not, had to lay down pencils and step to the side. (This laying down of pencils was to prevent copying.)

3. Then the line (which, by the way, was a two-headed monster, approaching from both sides of the room at once) passed my desk, presenting slates, and resumed seats, I turning rapidly from right to left and back to make a colored check-mark at the side of each slate bearing the correct solution. (This was active work and I flattered myself that I was economizing time immensely.)

I have since seen machinery that almost answers this description in other class-rooms whose teachers are passing through a certain early stage of pedagogical evolution. I want to help them out of this stage, and perhaps can hardly do better than to tell of what I saw as a substitute for this far-back plan, in a room recently visited.

"We are not teaching anything new in arithmetic to-day," said the teacher, apologetically; but I hastened to assure her that I should be very much interested in seeing what she did when she didn't teach anything new.

"Well," said she hesitatingly, "for economy's sake, I combined the arithmetic and the penmanship to-day. I intended to give ten examples upon the rule taught yesterday, to fix its operations more securely in all the pupils' minds and to give the slow ones and the absentees a chance to catch up."

"I wrote the examples one by one upon the blackboard, and gave instruction in penmanship as the pupils copied them. I left a blank in each, so that no impatient pupil could do any of them at the wrong time. They are getting out these papers now and their slates, according to an order given just as you entered the room. Now I must set them to work and get to work myself. There will be points in my plan which you will not understand, but I will explain them after the hour if you care to stay it through."

She then directed the class to fill the blank in the first example with the fraction  $\frac{1}{2}$  and go to work, which they did.

At a sign from her, two pupils came to her side and she proceeded to question them upon the example in a very low tone of voice, while the rest worked silently. They did not look dull, but listened carefully to her questions; answered with apparent brightness; challenged each other's replies once or twice eagerly, but in the same low tones used by the teacher; seemed to insist on a clear apprehension of each point; appeared finally to acquiesce in some proposition of the teacher and forthwith took their work to their seats, ciphering earnestly on the way. These two, I learned afterward, had been absent on the preceding day and so missed learning the rule. I watched the scene with fascination and now conclude, though I could not distinguish a word, that the teacher put them rapidly through the operations by a well studied series of questions.

They were interrupted three times by pupils who presented slates with the first example solved. In two instances, the teacher erased the example by a single stroke of a wet sponge and wrote a fraction with which the blank in the second problem was to be filled. In the other, she glanced at the slate and shook her head.

One of the two pupils who had received private instruction soon afterward returned to the teacher's desk, slowly, his brows knit, his lips pressed into a comical expression of discontent, his eyes riveted upon the figures, which, apparently, would not adjust themselves as he thought they should. Reaching the group at the desk, for by this time the teacher was working with two of the duller pupils, he looked on and listened a moment, seeking the clue to his own lack of success. Suddenly his face cleared, and, with a little skip, he set off for his desk again, followed by a look of mild remonstrance from the teacher, which was lost upon him. After that he seemed to encounter no obstacle, but solved and presented example after example with such rapidity as to be among the first to complete the work. The other absentee worked on with nearly equal rapidity and success. The two occasionally made faces at each other which might mean almost anything in the line of boyish nonsense and held up fingers to tell how many solutions had been accomplished. Other pupils similarly informed one another of their rate of progress.

Sometimes the teacher had three pupils at her desk at once, receiving needed help. At others, she walked about the room to get a better idea of the general progress and where help was needed. Once she stopped beside my chair long enough to say:

"Four months ago, this class had a sad habit of copying. They had worked with substitute teachers for some time and acquired several bad habits. I don't think any one looks at his neighbors' work now, except by inadvertency. My new plan of teaching spelling does away with dishonest copying in that subject, and in arithmetic I help them in various ways, such as having alternate lines take an example and the lines between a different one; erasing work as soon as it is done, etc."

"They understand me in these matters, and know that my desire is to help them. A perfectly honest student sometimes glances at his neighbors' work, either without intention of any kind or merely to see how far he has progressed. We have talked this all over and decided that the temptation to glance is to be resisted. The pupils, as well as myself, have suggested means of reducing it to the minimum. We work together pretty well in this matter, and without mutual suspicion. I find it pays to trust my pupils. I watch them none the less, but I don't let them feel themselves watched, much less suspected."

I had watched but had detected no attempt to imitate or to steal an answer.

The first pupil who presented his tenth successful solution received a smile in acknowledgment of his speed as a workman, and a nod in the direction of the book-shelf. From this he secured a volume and returned to his seat. Several slips of paper marked "the place" for as many pupils who were reading this same book in their odd moments. He opened at the slip bearing his name and settled down to a comfortable fifteen minutes of profitable resting. The book was "The Young Yagers."

As other pupils finished their work, they betook themselves to various quiet and instructive amusements. One shook his fist at the boy who had secured "The Young Yagers," received a wink for reply and proceeded to finish an ornamental drawing on one of the rear blackboards. I experienced a little shock on seeing a girl calmly take out a piece of crocheting and accomplish several rounds with great apparent satisfaction, "under the teacher's very nose." Several applied themselves to certain school-tasks that had been somehow left in arrears. There was not an idle moment for any one during that entire arithmetic hour.

At its close, several pupils had not finished the work.



The teacher supplied the remaining blanks for these children and directed them to work out the solutions at home and report to her before nine the next morning.

### Shall He Be Discontented?

A letter from a subscriber begins with his discontent with the situation he is in. He is in a small town; he has one assistant; he has small compensation; he is but little prized. He is capable of managing a school of a dozen assistants undoubtedly; he could fill a post in a large town or a small city; he could earn double the salary he gets; he could give satisfaction to a wide circle. He knows he is a better man than he is estimated to be.

He anticipated being transferred to the position he felt he was capable of filling, or thought he was capable of filling, but the vacancy he counted on did not occur, and he is fretting away in his old post. "Another year in L—," he says, as though it were a very prison. May we advise him?

1. Put out of mind the failure to get the better place unless you did not do all you could to get it. If it was no fault of yours let the failure pass out of your memory. Do not blame yourself when you have done your level best.

2. Do not think there is nothing for you to do because you are in the same place you were last year. Nothing is more mischievous than the idea you could do twice or thrice as well in some other place. Thousands spend their days in such useless imaginings.

David P. Page had charge of a small school in Newburyport; he taught so well there at probably \$30 per month, that Horace Mann felt he was able to fill a higher post; he did fill a higher post in a high and noble way, but he fitted himself by the teaching he did in that small and narrow field. Men who occupy great positions once wrought in small ones; they are in those higher ones because they labored so well in the lower ones.

"There is a Divinity that shapes our ends," and you, if you do your level best, may feel you are in the hands of a Divinity to be shaped for some proper field of work. You must have some faith; you must learn from your children. Mark how they come to school and learn the alphabet and all that, having faith it is for the best! You must follow their example.

3. You have a splendid opportunity to show your people that you are more interested in education than most teachers, and, in fact, are a growing man. Form a club to study education. Give some lectures; stir up the community. A case comes to mind of a man who graduated from a normal school and was put up in the Catskills in a small place, not the one he coveted by any means. He began to rouse the country by his earnestness; teachers' meetings were held at various points by his efforts, and he was designated a "live man." A better place was given him; not long after he was appointed to a principalship in Brooklyn at a salary of \$3,000. This comes from doing his best in the place where he was.

4. Value the opportunity you have to benefit those children; don't think wholly of yourself. You are in the world for other purposes than to draw a salary. You are there, it is altogether likely, because the "Divinity" proposes to "shape the ends" of some of those children and fit them for spheres of usefulness. Would you not feel it was worth something if thirty years from now some man should call on you and say, "That last year you spent in L— was the making of me?" It is true you may not hear such words, but you can deserve them; you can be "the making" of a good many if you will.

5. If you are in education to stay, consider this incident as determining you to make larger efforts to secure a higher place next year. There is no objection to an able man's having a place to exercise his ability and be paid accordingly. Not that he should not make dili-

gent and wise efforts to get a better place. That is really his duty. Lay out plans to be known to those seeking a good man. Some men want a good place, and deserve one, too, but do not lay out right plans to get one. Merit often fails because it does not advertise. A. T. Stewart used to say, "Get good things and then advertise them well."

On the whole, you should not be discontented and restless. Accept the situation as having a lesson for you; when "the mists have rolled away" you will, if you act according to your highest light all this year through, be glad that your lot was cast there another year. If you are dissatisfied and let that thought follow you and mold your acts, then in the future you will suffer and you will trace it back to this year.

### Parent and Teacher.

By SUPT. J. H. PHILLIPS, Birmingham, Ala.

The cause of nine-tenths of the petty difficulties of school life is the want of co-operation between teacher and parent. Teachers should labor earnestly to interest parents in the school work of the children, and, whenever their other duties permit, should visit their homes. The parent may not know the teacher; the child does, and has it in his power to mold the parent's opinions and to arouse his prejudices, so that in the event of a rupture at school he has an ally at home. Parents would relieve the teacher of much trouble and materially enhance the welfare of their children by an occasional visit to the school, and a word of encouragement to the teacher. When a parent has personal knowledge of the teacher, he is not likely to be imposed upon by an artful child, and is in a position to correct any unfavorable tendencies in the child's representations of the school.

The really troublesome pupils in a grade are very few, but, though in the minority, they usually manage to make up in activity what they lack in numbers. Those children accustomed to wholesome government in the home, as a rule, readily comply with the requirements of the school. The troublesome pupil is the one who has never known restraint at home—the boy who has been praised and petted into the belief that he is exceptionally smart, but that his teacher is too obtuse to discover the fact. The boy who enters school with the firm conviction that he is made of better stuff than the rest of the class, chafes and demurs when he finds that he passes current for only what he is worth. But this is the lesson he *must* learn sooner or later, and the sooner the better. The child whose exclusive home training has not developed self-dependence and self-restraint, must here learn the all-important lesson, that his own merit, his own efforts, must constitute the basis of his success and promotion in life.

On the other hand, it must be remembered that teachers are but mortal; all are inwardly influenced by the varied mental and moral characteristics which play before them day by day; all are subject to prejudices, all are liable to error. It would be remarkable indeed if an occasional mistake did not occur; yet let the teacher be credited with honesty of purpose and a sincere desire to do the right. Too often the teacher looks upon the child solely from the standpoint of the school, without considering the home and its claims; too often the parent looks upon school discipline only from the standpoint of the home and the ever-recurring round of domestic duties. Thus arise the majority of school troubles.

A familiar legend speaks of two knights that met on the highway where there was an overhanging shield. One claimed that the shield was gold, the other said that it was silver. The dispute became warm and ended in fighting. They fought a long time, but, being equally matched, neither prevailed. When at length both had fallen to the ground exhausted, a third knight appeared upon the scene, and they appealed to him to decide which was right. After an examination, he found *one side of the shield gold, the other silver.*

Often must the principal or superintendent act the part of the third knight, only to discover that in this or that difficulty both parent and teacher were partly right. Let the teacher, if possible, visit the home, and let the parent visit the school; thus will the best interest of the child be conserved. When parent and teacher come together in earnest consultation for the good of the child, and not to justify or condemn, amicable adjustment of difficulties and complete reconciliation of differences may be generally reached.

### The System.

The following letter and its reply are printed for their suggestiveness.

MY DEAR MISS—:

I particularly want some observation lessons on "things" to use for publication. That, as you know, includes qualities and relations of objects, form, size, position, direction, etc., properties and conditions of matter, and related subjects. I shall need these lessons for a coming number of the —, and I know of no school where I should be more certain of finding available material than yours.

May I visit you, with the object of reporting such lessons?

MY DEAR MISS:—

I regret to say that No. —, like other schools in our system, is bound by its programs under the Course of Study. Our "color lessons" are separate affairs. Our "form lessons" stand apart. Our "quality lessons" are detached from everything else. The properties and conditions of matter are "not in our grade." The nearest we ever come to a good, old-fashioned object lesson is in a certain division of the language work devoted to descriptions. In these description lessons a few of the most obvious qualities of an object, usually its form, color, materials, and use, are noticed, named separately, and finally named in order. If such meager "object lessons" will answer your purpose, you are welcome to draw upon our small fund. Come at any time.

It is evident from the above that rust will attack the smoothest running machinery. In the system which furnishes this testimony we happen to know that each worker is doing his or her very best. The teachers, though inexperienced, are earnest. Because they are inexperienced and untrained, they have to be closely guided. If the Course of Study did not enumerate the qualities of substances and put so many in each grade they would not be taught. If programs were not made out for these teachers, telling them when to teach each subject and how much time to devote to it, they would not get satisfactorily through their term's work. With the most careful guidance on the part of the principal and the most indefatigable labor on the part of the teacher the term's work is done only barely in time. The excuse "not in our grade," then, becomes a valid one, however miserably mean its application may be.

The state of affairs quoted is not by any means the worst we know of. In fact, it is not relatively bad. It is relatively good. Yet, we hope to see it improve as the years go by, and will point out the causes that, in our judgment, must be removed in order to induce improvement. The reasons why the teachers in No. — cannot stop once in a while to give a "good, old-fashioned object lesson" are:

1st. There is too much direction of the work by persons who, not performing its details, must fail to see the thousand natural connections between the different departments and incidents of study, and the great economy of labor that a free, trained teacher can practice.

2d. This meddling is made necessary by the fact already stated, that the teachers are not trained and cannot be left to their own free devices.

3d. The immoderate haste in teaching children to read compels the teachers to spend too much time in forcing words, words, words upon their pupils and leaves too little for the development of thought. This

arises partly from the ambition of rival schools, "results" in reading being very easy matters of comparison, and partly from the mistaken ambition of parents, which it is the duty of teachers to correct on every available occasion.

Too little trained teaching skill and too much hurry to get the wrong thing in first are at the bottom of most school evils.

### Variety.

By A. C. SCAMMELL.

"And what is your program for to-day?" asked the superintendent, as he entered the school-room promptly at nine. Did he not know? Had he not studied the "Daily order of Exercises," on the corner blackboard, for several minutes, the afternoon before? "Yes, I know that was yesterday's program, but what is it to-day?" was his reply to the teacher's surprised and almost jealous glance at her carefully timed order. "I seldom vary this," she said. "I like system." "So do I; but I *won't* eat the same dishes for breakfast five mornings in a week; or, if I had to, I would ask to have them hashed, spiced, or flavored with a new sauce, now and then." This from the grave new superintendent, said with a boyish emphasis that quite disarmed him, and set the teacher to thinking. "I believe I'll experiment," she thought, when a few moments later, she was alone with her pupils. "I'll begin at the beginning and surprise the children." She opened the organ. "How many of you would like to learn a new morning hymn? Suppose we have a school choir to lead us! Two girls and two boys whom I will name may come to the organ now, and in a few mornings we will have a new quartet. We will read this hymn together first, and see how pretty it is!" It seemed to the teacher that her pupils had never sung so well before. "Now, children, instead of repeating the Lord's Prayer, perhaps you would like to say a little prayer in verse; would you?" Of course they would. So upon the center blackboard, she wrote this simple hymn-prayer:

"Father, we thank Thee for the night,  
And the pleasant morning light;  
For rest, and food, and loving care,  
And all that makes our day so fair;  
Help us to do the things we should,  
To be to others, kind and good;  
In all we do, and all we say,  
To serve Thee better day by day."

The words were read reverently and with an evident effect upon the children. "Devotions, ten minutes" said the time-table in the corner; "9:25," said the clock; but the day had a new setting, and in it the school-room had never seemed more attractive. "Now, we'll take our books; no, both divisions may take paper and pencil, and we will have an arithmetic race; the first division may be Yale, and the second, Harvard; oh, you don't know just what that means, do you? so I must tell you. Such a race! Fifteen minutes were out before they had fairly began. When they closed, and the division that was expected not to win, came out ahead with flying colors, schedule time said, "9:45," and the clock made it 10:15, nearly recess time. The superintendent happened in, in the course of the afternoon, while they were yet experimenting, and found a very wide-awake school, under a new teacher. He stayed five minutes, and went out with a gratified expression.

It is now out of the question to appoint as teachers in the public schools, persons who have done nothing to qualify themselves for their work, except to get together the information needed to pass an examination in scholarship. Such persons cannot do the work required in a modern school. It is futile to expect it.

—Wm. H. Maxwell.



# The School Room.

SEPT. 23.—NUMBERS, SELF, AND EARTH.  
SEPT. 30.—PEOPLE AND DOING.  
OCT. 7.—PRIMARY.  
OCT. 14.—LANGUAGE, THINGS, AND ETHICS.

## Teaching Numbers. II.

### CHANGING UNITS.

There are seven things with which the pupil must be acquainted—that must be measured: money, weight, length, surfaces, bulk, time, and circles. Each of these must be exemplified objectively.

1. The teacher brings in a dollar, 10 dimes, and 100 cents. He shows the dollar. "This dollar is equal to 10 dimes; I change it into 10 dimes." He shows a dime. "This dime is equal to 10 cents; I change it into 10 cents."

Again he shows them 10 cents. "This is equal to 1 dime; I change them into 1 dime. These (10 dimes) are equal to 1 dollar; I change them into 1 dollar."

(It is best in doing this for some pupil to have the dollar and give it to the teacher for the ten dimes, so that the pupil may see the dollar changed into dimes; it ought to disappear.)

Here is the root of what is called "reduction;" the change from a small number to a large one appears; also from a large to a small; but it is not necessary to introduce the terms "reduction," "ascending" or "descending." It is a mistake to do so.

**Problems.**—Let the pupils make 50 problems. Thus: \$4, 4 dimes, 4 cents are how many cents? **Solution.** In \$4 there are 40 dimes, and 4 dimes are 44 dimes; in 44 dimes there are 440 cents and 4 cents are 444 cents. Let them make 50 problems thus. In 563 cents how many dollars? **Solution.** In 563 cents there are 56 dimes and 3 cents; in 56 dimes there are \$5 and 6 dimes. So in 563 cents there are \$5, 6 dimes, and 3 cents.

By solving these in denominations they know well, they become ready to handle those they do not know well; they get "the hang of reduction," so to speak. It is a *changing of numbers*.

2. To change English money there should be some pound notes, sovereigns, shillings, pennies made of lead; there should be quite a number of these. Show 1 pound, 4 shillings, 5 pence; Ask "How many pence?" Solve it, and call for 50 to be made. (It is well to tell the pupils that the sovereign is worth \$4.86, the shilling about 25 cents, and the penny about 2 cents.) Hold in the hand 346 pence, and ask, "How many pounds, shillings, and pence?" Show how you find out, and let them make up 50 problems.

3. A scale with weights is brought in and the avoirdupois method explained, and a problem given and solved as, 240 drams are how many ounces and pounds? The pupils bring in 50 problems. The reverse is dealt with also. So with apothecaries' weight and Troy weight. By taking pieces of lead to the apothecary and jeweler all the weights may be cut off with a sharp knife; they should be labeled and put in boxes. A box of sand furnishes the materials to be weighed. Let actual problems be made. This sand weighs 4 lb. 3 oz. 12 pwt., Troy; how many pwt. etc. Here are 700 grs.; how many lbs.? Let the pupils make problems.

4. Let a foot rule, a yard stick, and a slender pole be brought. Let the latter be marked off into 16 1/2 feet; it is a rod. It is well for each pupil to have a foot rule and from this make a yard stick. Now ask a pupil to measure the length of the side of the room; it is 14 feet and 9 inches. How many inches? Let them construct 50 other problems. Let them measure out of doors. It is 15 rods from the door to some point selected. How many inches?

5. Cut out a square foot of manilla paper; also a square yard. With this show that the number of square feet is found by seeing there are 3 square feet on one side or in one tier, and as there are three tiers there will be 3 times 3 square feet, or nine square feet in that square yard. Give problems. The room is 14 feet on one side and 15 feet on the other. How many square feet in the room? Do not allow them to say the length multiplied by the breadth gives square feet.

**Solution.**—There is a row of 14 square feet on one side of the room; there are 15 such rows—that is, 15 times 14 square feet or 210 square feet. Let the pupils bring in 50 problems.

6. Construct a cubic box that shall be just one foot inside. Measure. This may be made of manilla paper; it should have no cover. Make a cubic inch of paper or wood; if possible have every pupil make one. Place them side by side in the box on one side of the bottom. How many such rows on the bottom with 12 in each row? Answer, 12 x 12. In one row there are 12 cubic inches in 12 rows 12 times 12 cubic inches = 144. If there are 144 cubic inches in one section and there are 12 sections in all, there will 12 times 144 cubic inches = 1,728. A skeleton cubic yard can be made by the pupils and its contents calculated; also a skeleton cord for wood.

7. A gill and pint measure, also a quart are brought in, and a

pail of water. A problem is proposed and solved, and the pupils bring in 50 problems.

8. The clock, or a watch, gives the length of a second. Propose a problem as 4 hr. 5 min. 10 sec. are how many seconds? Let pupils make 50 problems.

9. Bring in a paper circle. Show that it is divided into 360 equal parts called degrees; that each degree has 60 parts called minutes, and so on. Give problems.

10. Let the teacher now propose a problem like this: John worked 14 hrs. 21 min. 37 sec. and James worked 9 hrs. 47 min. 43 sec.; how much time in all? Let the pupils construct problems of this kind. Again, John has 3 bu. 2 pks. 2 qts. in each of 4 bags; how much in all of them? Let the pupils construct 50 problems. This is not all that can be said about denominate numbers, but it is enough until fractions are mastered. There will come up a class of different questions, and the important thing is that the terms *bushel*, *pound*, etc., shall have a clear representation in the mind; they must be more than words. It is absolutely necessary the measures be shown to the pupil—they can be except in English money, but here the penny may be procured. With these terms, then, perfectly clear in the mind progress is certain.

## Thought Work.

Give exercises to children that will develop their judgment, e.g., draw two lines on the blackboard of exactly the same length.

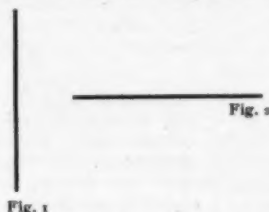


Fig. 1

See Figs 1 and 2. Let them tell which is the longer. Unless they have had such work they will say the vertical line is the longer. Let them test and find their mistake. Try again with two other lines. Test as before. They will not be long in discovering what many older children do not know; viz.: A vertical line seems longer than a horizontal line of the same length. In-

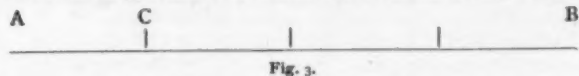


Fig. 2

stead of giving them such old dry bones as, 12 less 3 = what? Draw a line on the board, and letter it as in Fig. III. Then ask this question: If from A to B it is 12 miles, and from A to C is 3 miles, how far is it from B to C? Here they must find the answer 9, found by taking 3 from 12; but who will deny that they had far more mental discipline than the first example would have given them?

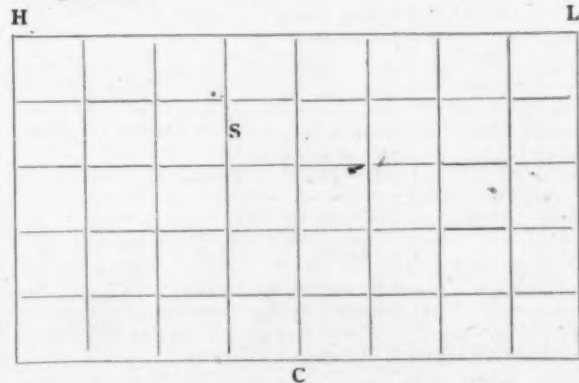


Fig. 3

Again, draw a diagram, as shown in Fig. 4. Then say H is John's home. S is the school house. L is Willie's home. Which boy walks the farthest when going to school? How many more blocks does Willie walk than John? C is the candy-store. How far will each boy walk if he goes from the school to the candy store and then home?

Add many more questions to this and thus make it a part of yourself. A little thought will give you problems in addition, subtraction, multiplication, division, and partition; each one of which will cause more thinking than a dozen lifeless tables.

## Topics in Physiology. IV.

## POSITIONS.

By E. W. BARRETT, Milford, Mass.

At desk	working position, body erect, chest well out, feet on floor, free movement of arms, arrangement of materials on desk, exercises in rising from seat, heels together, feet drawn back slightly, exercises for back muscles, avoid lounging or "sinking" positions, shoulders square or "even."
	head erect (eyes), neck back, shoulders square, chest free from compression, body square on hips, no resting on desk or back of bench, left foot in advance of right, both on floor, right forearm on desk, wrist raised, two outer fingers rest on desk, pen-holding, left forearm and hand, arrangement of materials, exercises for muscular training.
In writing	
In standing	crown of head raised, neck well in place, chin drawn in (not raised). shoulder blades in place, arms natural, at sides, lungs filled with air, chest well forward and raised, abdomen drawn in (vital organs then in place), knees together, heels touch, toes turned outward (60°), exercises to strengthen parts
	<div style="display: inline-block; vertical-align: middle;">           deep breathing, gymnastics, poising body, rise on toes, stretching movements, bending arm and leg "         </div>
In oral reading	observe position in standing, head well up, eyes natural, book in left hand, correct angle (45°), high enough to look naturally at audience, fingers holding book in front and back, turning leaves with right hand, proper breathing.
	take correct position of body, extend and draw back feet alternately, depress the toe each time, strain muscles, take 14 inch steps, ball of foot touches first, heel follows, cultivate a light step, remember head, shoulders, and chest, breathe through nostrils.
In walking	
In running	body inclined forward, forearms horizontal and free, chest raised, head raised, step on toes, breathe through nostrils, in jumping land on toes.

If these positions in the physiology lesson are rightly taught by a teacher who will illustrate and act them out, many pupils will apply what they have learned; when their recitation hours arrive. This method assists us in our work by omitting "wordy" corrections on position during the reading and writing lessons. Harping on "standing straight" will not improve the carriage. It comes from long muscular training, habits must be broken, and parts strengthened. During all active exercises in the school-rooms admit fresh air in abundance, else the "modern slaughter of the infants" will go on.

## Physical Education. II.

By E. B. SCARBOROUGH.

## THE HEAD.

The next time you go to an entertainment or anywhere where there is a large number of people together, I want you to look around and see how many people you find who hold the head erect. You will discover that probably three quarters of the audience carry the head either on one side or the other, or let it droop forward. Now and then there is one who elevates the chin, and throws the head too far back. There are really few people who carry the head well. Why do you suppose it is? You will see one reason for it if you will stand before a mirror and rest your weight over the left foot.

The right leg now hangs as a weight and to balance this the trunk must be tipped to the left. Now to keep up the equilibrium the head is moved over to the right side.

(Teacher illustrates this either in her own person or by one of the pupils.)

This is one cause of the carrying of the head to one side. Standing on one foot has other and more injurious effects which we shall study about hereafter.

Another cause for faulty positions of the head is weak neck muscles, caused by a lack of development. The head is dropped first to one side and then to the other to rest the weak muscles. We shall have some exercises by and by that will be helpful in making our neck muscles strong.

I think we all made up our minds at our last lesson that we would like to have just the fine, erect, and beautiful form we talked of then. And you will notice in observing people that the man or woman who has an imposing and commanding presence always carries his head well.

But, children, our appearance is not the most important thing to be considered in this matter of carrying the head. The health is of more vital importance.

Suppose John is watering the lawn, and suppose you put your foot on the hose he is using. What happens? Why of course the water stops running through the hose. There are little hose pipes running down through our necks which we call jugular veins. They carry the blood, which the brain has been using and has made impure, back to the heart to be purified again.

If we bend our heads forward continually, as people do sometimes over their work or studying, we partly shut off the flow of blood just as you did of the water in the pipe on the lawn. This dams up the blood in the head, the brain becomes gorged, we cannot think and we have headache.

Another evil consequence of a bad carriage of the head is impaired eyesight.

And still another result to be guarded against with all our might is the flattening of the chest.

You will observe that, when people allow the head to hang forward, the chest is depressed. (Teacher illustrate.) This means that the space allotted for the lungs is lessened and the lungs are cramped for room. We shall learn more about this later.

You see there are several serious consequences to be avoided by correct carriage of the head. I will give you an exercise which you can practice at home, which will give the head, and the entire body as well, the proper position.

Stand with your back against a door, or the wall, if there is no baseboard, touch the heels against the door, also calves, back of thighs, shoulders, and head. Now push the neck back, holding the chin in, and make the space between neck and door as small as possible. If you can pinch one finger you may be proud. Many cannot pinch three. Keep this position and walk off about the room for a time.

## SUGGESTIONS TO THE TEACHER.

All bending of the head forward, backward, and sideways; also twisting of the head is good for neck muscles. The twisting is done with the shoulders rigid. It may be made more difficult by adding the bending after the head is twisted. This exercise would be commanded as follows:—Head to left, twist; (when face is turned over left shoulder,) backward, bend; (back of head tipped toward right shoulder,) upward, raise; forward, twist; (back to position). Repeat the same on the right side.

Another exercise for strengthening the neck muscles, is rolling the head. Begin by letting it drop relaxed on the chest; then carry it to the left side, back, over right shoulder, and to the erect position, letting the head be as heavy as possible, and making as large a circle as can be made without moving the shoulders. Lifting develops the sides of the neck.

Any exercise that forces the head back and chin in is good for the elevated chin.

Carry a book on the front part of the top of the head, holding the chest so that the book will not fall. All common defects of carriage may be helped by carrying the head high. Think of trying to touch the ceiling with the head. Keep the chin in always.

All exercises which tend to develop the muscles of the neck are beautifiers of the neck, as exercise builds up the muscles of a thin neck and reduces the fat of a large one.



■ Exercising the most superficial muscle of the neck—by drawing back the corners of the mouth and making the throat rigid is a beautifier of the neck.

The design of this paper and of those which follow is not so much to give a series of exercises as to convey to the mind of the child (and the teacher where necessary) the reasons for the exercises and the ability to use them intelligently. These that are suggested simply serve as a type of the class to be given for the subject under discussion. Others for variety may be originated by the teacher or be gathered from any gymnastic publication.

### Care of the Eyes.

Avoid reading when lying down. Sit with the back to the light, or so the light will come over the left shoulder when reading, sewing, or writing. When writing, should the light come from the right side, the shadow of the hand and pen or pencil falls on the paper, constantly shading the line of work and fatiguing the eye. Veils, especially spotted ones, are injurious to the eyes; and, if veils must be worn, they should be of the softest, clearest net. The eyes should be rested five or ten minutes after each hour's reading. The study of music and German is hard on the eyes, and the eyes should be rested more frequently and longer at a time when engaged in these studies. Avoid facing the lamp-light when studying. A bad stomach sometimes makes bad eyes. Attend to the digestion. Poor ventilation frequently weakens the eyes. When the eyes feel tired, bathe them with soft water, hot or cold, whichever on trial proves more comfortable. The hot water generally proves more beneficial.—*Kansas Medical Index.*

## Geography by Doing. II.

### FIFTH LESSON.—From Spring to River Mouth.

The last lesson ended at the spring in the hillside. Begin here and trace the rill, the brook, the creek, the river.

Ask questions that force the pupil to imagine. Where will the water go after leaving the spring? Elicit that the rill will meet rills from other springs, making a brook; the brook will flow on meeting other brooks and forming a creek; the creek likewise augmenting until a river is formed.

At the sand table, roughly throw up a river basin, illustrating this; a concavity, shaped something like the bowl of a coal shovel. Designate the site of a spring back in the highlands. Allude to other springs. Sprinkle crooked lines of sawdust to represent the course of the river and its tributaries.

Some rivers empty into the sea; others into lakes and still others into larger rivers of which they are tributaries. Tell of rivers that lose themselves in deserts. Examples, those of Persia, Arabia, and Gobi. Speak of some of the great rivers of the world; the Nile, Mississippi, Amazon, Hoang Ho, "China's Sorrow."

Pupils tell of rivers, creeks, or brooks they have seen. How wide? What kind of banks? Current? Uses? Why are large cities built on rivers? Example: New Orleans.

Pupils draw simple map of river and tributaries (from your molded map). Below write the words (1) Spring, (2) Brook, (3) Creek, (4) River, (5) Ocean.

### SIXTH LESSON.—The Water Parting. The River Basin.

Draw the old hill cross section on blackboard. Pupil point out the hill-top or crest. What becomes of the rain falling there? (Discussion.) Some flows one way, some another. Pupil mark exact point at which he thinks separation would take place. Some other pupil indicate corresponding place in the sand map.

Elicit *water parting*. It parts the water. In the far West they call a water parting a *divide*. In the sand map let the entire water parting now be traced. Together with the coast line it will enclose the river basin.

Who can think of some water partings made by man? The peak of a house roof. The middle of the street, shedding water into the gutter on either side. How wide is a water parting? Develop the idea that it has no width; it is a line, formed by the upper meeting of the two slopes. All the surface not belonging to one slope belongs to the other.

How much of this land (the sand map) belongs to this river? All the land within the water parting. Let us call this land a *river basin*. How much land belongs to any river basin? All the land the river drains. What becomes of the rain falling outside the water parting? It flows into other rivers.

If possible have pupils mold, on individual sand pans, river basins of their own. Pass around and question on vertical dimensions as proportioned to horizontal. Otherwise let a couple of pupils mold at the sand table. Question class, leading them to see that if the molded map were not exaggerated in its vertical dimension, the relief would not be perceptible.

### SEVENTH LESSON.—Type Features.

Liken your river basin (sand map) to that of Mississippi. When reference is made to any definite point, locate it on a wall map of North America. Talk about the lowlands in the valley. The marshy areas; the delta. What grows there? Read in Aunt

Martha's Corner Cupboard about rice. Pupils make collection of products: Rice, cotton, sugar, tea, etc.

Tell about the levees, built to keep the river from overflowing the lowlands. When does it overflow? Cause?

Take class on an imaginary canoe voyage up the river. Let them describe, wherever they can. Is it as easy pulling the boat now as it will be coming back? Why? Introduce some ideas of distances. Our canoe travels twenty miles a day. The river is about 4,000 miles long. How many days before we reach the source?

What difficulties will be encountered on the trip? Show pictures of the Falls of St. Anthony or some others. Tell about the snags so feared by river pilots.

The river is muddy. Where did the mud come from? What becomes of it? (Not all questions need be answered at this time. Open questions lead to future work.)

The steamboats on the river. Loaded with what? Where did the cotton come from? Something about cotton plantations.

Tell of contrasting types of rivers. Show pictures of the Colorado canyons, the tropical scenes of the Amazon, or others. That is to say, as soon as the class conceives the type conditions of the river basin, lead them to realize the very diverse aspects of these conditions. A fearless use of the chalk in sketching, however crudely, is a great help.

### EIGHTH LESSON.—Field Work.

A field lesson can be given in the heart of a crowded city. After a rain storm, nearly every type feature of the river basin may be found in miniature in the gutter. Tiny rills have spread out the sand into *deltas*, the stream ramifying, as delta streams do. *Bluffs* have been formed and the rill later swinging away, has left a *bottom land*. Perhaps among the small gravel may be found the semblance of a *rapids*. Elsewhere the stream has bifurcated and closed again, making an *island*. An abrupt channel cut through the sand, tiny cliffs on each side, suggests a *canyon*. Where the water is confined in a narrow bed, the pupil sees a *rapid current*. Now it broadens and becomes a *slow current*. If a comparatively broad mass of sand has been left upraised and uncut by the waters, it serves as a *plateau*. This action of the stream in tearing away is *erosion*. It is one of the two great complementary processes affecting earth change.

Have pupils observe all of these features at hand. Next day their writing lesson may comprise the result of these observations.

A field lesson out of town may comprise a study of sub-brook basin complete: the source, the water parting, some of the sub-water partings, the mouth; together with type features as suggested above.

### REFERENCE BOOKS.

Guyot's "Common School Geography," Parker's "How to Study Geography," "Aunt Martha's Corner Cupboard," "Science Ladders," (G. P. Putnam's Sons).

No. 1, "Forms of Land and Water," "Picturesque Geography (Series of pictures). (Boston School Supply Co.)

### THE SAND TABLE.

Not alone in geography work but in history and literature the sand table has proven its value. The lesson describes the battle of Long Island. The teacher steps to the sand table and with a few touches throws up a crude semblance of the broken hills through which the red-coats poured. This simple device makes the story intensely real, so in geography; the best known aid in structural work and a basis for descriptive recitation of any sort.

Fig. 1 shows the underside of the table top. Built of tongue and groove three-quarter inch boards. Length, four feet, width, three. A three-inch rim around the edge to keep the sand in. (See Fig. III.)



Fig. 1 shows a dotted rectangle. This marks the outline of the table frame when the top is placed upon it. Notice just within the dotted line four blocks of wood. These blocks are screwed fast to the underside of the table top, as shown. They should be nine inches long and two inches wide and thick. Each block has

one oblique face which presents itself *outward* or against the inside of the table frame. The end of a block is shown in Fig. IV.

The frame is any ordinary table frame, having a length of 37 inches and a width of 23. It should be mounted on castors.

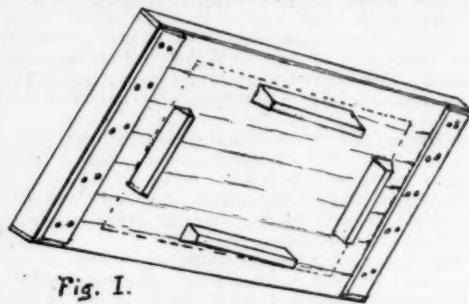


Fig. I.

When the table is put together the top is not fastened to the frame. It is merely set on, the blocks fitting loosely within the frame. This enables the teacher to tilt up the top from any of its four sides. A stick of any sort, or a book serves as a prop. (See Fig. III.)

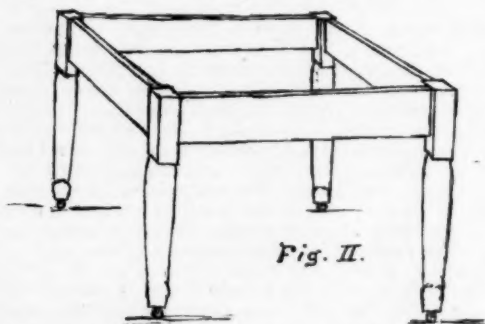


Fig. II.

This arrangement renders the top at once detachable, facilitating carriage from one room to another. This style of table does away with the heavy sand-drawer, so cumbersome in the old sand tables. Fig. III. shows the sand carried in an ordinary pail. A box will do as well; should have handles on it for carrying.

The best sand is that used by masons for building. It should be moistened an hour or two before it is used. Knead it well until it loses its mud consistency and becomes mealy and even.

In showing structural relief to the whole class it is well to strew water partings, river courses, etc., with salt so that they may be distinguished by pupils in the farther seats. A map ready finished before the lesson is only half useful. Mold while you talk.

(Fig. 1.) Table top;  $\frac{3}{4}$  inch tongue and groove pine; four feet long, three feet wide; three inch rim. Strengthened by cleats. Blocks 9 inches, by 2, by 2; one side planed oblique.

(Fig. 2.) Ordinary table frame; height, 29 inches, with castors; length, 37 inches; width, 23 inches.

(Fig. 4.) Showing position of block.

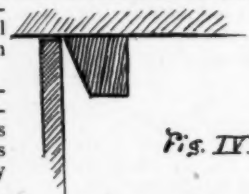


Fig. IV.

## The Earth and Sun—Their Mutual Relations.

### A STUDY IN MATHEMATICAL GEOGRAPHY.

By WILBUR S. JACKMAN, Cook County Normal School.

It is a fact easily within the comprehension of very young pupils that the condition of things, as we now find them on the earth, is absolutely dependent upon the particular relation which now exists between the earth and sun. It follows, therefore, that the proper study and knowledge of this relation as one of fundamental importance, if the phenomena of climate and life distribution are to be at all understood. In this study it is a singular fact that, while it is possible for pupils of public school age, wherever they may be situated, to make a large number of observations, it is also true that all, or nearly all, will lead them directly away from the truth regarding the earth and the sun. The earth appears to be flat, but it is, really, round like a ball; it seems to be stationary, but it is in inconceivably rapid motion—in fact it has several motions. The sun appears to sweep through a great arc in the heavens each day, and to rise towards the zenith and then sink towards the horizon in the course of a year, moving on a spiral line; relatively, though it is stationary. The sun seems to be much smaller than the earth, but, really, it is vastly larger. Unaided, it is impossible for the pupil to reach the truth with any means that he is able to employ, and it is necessary, therefore, that the teacher place before him in proper order a series of statements of certain leading facts that have been determined by prolonged observation and accurate

measurements. By this means, the observations of the pupils will gradually assume a proper significance to them.

In mathematical geography, as it is ordinarily taught, the pupils do not get even an approximate concept the size, distances, and rates of motion, either actual or relative, of the earth and other heavenly bodies. While it is not possible even to approach an adequate concept of these as they absolutely are, by proper means, through the pupils' observations, an intelligent notion may be given of the relations as they exist. A few suggestions will indicate to the teacher how daily observations may be utilized in this study.

### I. CONCERNING THE EARTH'S SHAPE.

1. The earth appears to be flat; if it were really flat what would be the fact concerning sunrise to people on different parts of the earth's surface?

2. How would sunset appear under the same conditions?

3. The sun appears to be smaller than the earth; if it were really so and if the earth were flat, what would be the facts concerning the forenoon, noon, and afternoon on different parts of the earth's surface?

(a) *Statement.*—The sun is approximately eight hundred sixty thousand miles in diameter; the diameter of the earth is eight thousand miles.

4. The diameter of the earth bears what ratio to that of the sun?

5. If the diameter of the sun *appears* to you to be two feet (the teacher may take the average apparent diameter as given by the class) what would the diameter of the earth *appear* to be if you were on the sun?

6. Suppose you represent the diameter of the earth by a line one inch long, by what length of line must you represent the sun?

(b) *Statement.*—The distance from the earth to the sun is ninety-three million miles.

7. How far apart must the two lines given in No. 6 be placed so that the distance may bear a proper ratio to the respective diameters of the earth and sun?

8. The sun being so much larger than the earth, if the latter were flat, what would be the facts about the forenoon, noon, and the afternoon on different parts of the earth's surface?

9. What facts do you know to actually exist about sunrise, forenoon, noon, afternoon, and sunset on different parts of the earth?

10. Telegraphic communication now makes it possible for us to read in the daily papers of an event that has taken place in Europe on the same day but, according to our clocks, at an hour later than it occurred. That is, we may read at eight or nine o'clock, A. M., about what is said to have taken place at twelve, noon. Clocks indicate indirectly the altitude of the sun in the heavens, and, it follows, from the foregoing, that when the sun is in the zenith in one place it is much nearer the horizon in another. The newspaper reports show respecting two places, one west, the other east, that at the same moment the sun will be nearer the eastern horizon at the former place than at the latter; also, that it is possible for two persons to be so situated that the one in the east may see the sun in the zenith, while the other may see it at the same time on his eastern horizon.

11. What is the relation to each other of the two lines of vision of the two persons who thus see the sun, the one in the zenith the other on the horizon?

12. What supposition can be made that will explain this fact? Can it be explained by more than one supposition?

13. When one ascends an elevation, how does the horizon line change? Can this be explained by more than one supposition?

14. What conclusion can be drawn from the foregoing study respecting the shape of the earth?

### II. CONCERNING THE SLANT OF THE SUN'S RAYS.

1. What is the relation, to each other, of the shortest rays of light and heat that fall from the sun upon the lighted area of the earth?

2. If the earth were flat, the sun being larger than the earth, upon what would the degree of slant of the shortest rays depend?

3. If the earth were flat, what would be the relation between the degrees of slant on different parts of the earth?

4. From what was learned under I., Topic 10, what must be true concerning the slant on different parts of the earth within the lighted area?

5. What is the relation, to the earth, of the rays that strike the central point within the lighter area?

6. What is the relation, to the earth, of the rays that strike the extreme border of the lighted area?

7. What supposition respecting the surface of the earth will account for the facts about the slant of the sun's rays?

### III. CONCERNING THE EARTH'S MOTIONS.

#### A. Rotation.

1. Supposing the earth to be stationary, as it seems to be, what movement must the sun perform to produce day and night?

2. The sun being distant ninety three million miles, how far would it have to travel to produce a day and night?

3. In what time would the sun have to travel the distance necessary to produce a day and night? How far would it travel in one hour? In one minute? One second?



(c) *Statement*.—The sun in its relation to the earth may be regarded as being stationary.

4. What supposition can you make that will explain the occurrence of day and night?

5. The earth's circumference being twenty-five thousand miles, how far must a given point on the equator move during one day and night? How far in one hour? How far in one minute? One second?

6. If the earth were stationary, from appearances, what would the truth be respecting not only the sun but all the stars, near and remote?

7. Which supposition explains the appearances in the simpler manner?

#### B. *Revolution*.

1. The sun being considered stationary, what movements of the earth can you imagine will give to the sun its apparent movement on the meridian in the course of a year?

2. Imagine a tipping of the north pole towards the sun during six months and a reverse motion during the other six months; what would be the apparent motion of the sun due to this?

3. Imagine the earth with a pivotal motion on the south pole—a wabbling motion like that of a dying top; how would the sun appear to move?

(d) *Statement*.—The north star may be regarded as a fixed star.

4. If the earth wobbled or tipped what would be the appearance, in each case, of the north star?

5. With these facts in mind, what possible supposition can be made respecting the earth's motion which will account for the sun's apparent movement on the meridian, with the attendant change of seasons, and the stationary appearance of the north star?

6. In addition to the supposed motion of the earth, what other facts must be associated with it in order to fully explain what has been mentioned in the previous question?

#### IV. CONCERNING THE VARIATION OF LIGHT AND HEAT RECEIVED FROM THE SUN DURING A YEAR.

Procure a scantling from four to six inches square and about four feet long and square the ends. Fasten one end of this by means of a hinge to a heavy board about one foot wide and five feet long. It should be hinged to the board at about one-third its length from the end and so that the scantling may be moved back and forth from the perpendicular to the horizontal position. Fasten the board firmly to the ground in a horizontal position in the school yard on a north and south line with the free end of the scantling towards the south. Attach to one side of the scantling a small brass protractor with its straight edge either *parallel with or at right angles* to the upper surface. From the center of the arc, suspend a shot or bullet by means of a thread and it, hanging vertically across the face of the protractor, will indicate the degrees of slant which the scantling may have.

As soon as practicable, after the opening of the school year, on a day when the sun is shining and when it is on the meridian, by a block underneath, support the scantling so that *it will cast a shadow from its cross section only*. It is evident that it will then have the same slant as the sun's rays; and if we regard the stick of wood as representing a definite volume of sunlight and heat, it is clear that the area of the shadow cast by the cross section is equal to the area covered by this volume of sunlight and heat. Read the angle of elevation of the sun at this time by means of the protractor and mark and measure the area of the shadow cast on the board. From week to week, by moving the supporting block back, the scantling can be re-adjusted to the changing slant and the different areas covered by the same volume of light and heat as the season advances may be marked, measured and compared.

By this means, it will be shown as the sun moves down the meridian, and as the days become shorter, that a given volume of light and heat is distributed over a larger space and consequently the effect will be less upon any part of that area. The apparatus here described will not only show this fact, but it will furnish a means for comparatively accurate measurement, in which the area of the cross section of the stick, representing the area covered by this volume of rays when vertical, may be taken as a convenient standard.

### Food and Digestion.

What is nutritious food?

What foods are most nutritious?

Can one food be more easily digested than another?

What nutritious foods does nature most require?

Does a person's digestion affect his disposition?

Does the nature of their food cause nations to differ in character, habits, and appearance?

Does climate cause a radical difference in the food of man?

WEBB DONNELL.

## Supplementary.

### Heroes.

The bravest battle that ever was fought!

Shall I tell you where and when?

On the maps of the world you will find it not;

'Twas fought by the mothers of men.

Nay, not with cannon, or battle-shot,

With sword, or nobler pen;

Nay, not with eloquent word, or thought,

From mouths of wonderful men.

But deep in a walled-up woman's heart—

Of woman that would not yield,

But bravely, silently bore her part—

Lo! there is that battle-field!

No marshaling troop, no bivouac song;

No banner to gleam and wave!

But oh! these battles they last so long—

From babyhood to the grave!

### I Wouldn't be Cross.

I wouldn't be cross, dear, 'tis never worth while;

Disarm the vexation by wearing a smile.

Let hap a disaster, a trouble, a loss,

Just meet the thing boldly and never be cross.

I wouldn't be cross, dear, with people at home,

They love you so fondly; whatever may come,

You may count on the kinsfolk around you to stand,

O, loyally true in a brotherly band!

So, since the fine gold far exceedeth the dross,

I wouldn't be cross, dear, I wouldn't be cross.

I *wouldn't* be cross with a stranger. Ah, no!

To the pilgrims we meet on the life path we owe

This kindness, to give them good cheer as they pass,

To clear out the flint-stones and plant the soft grass.

No, dear, with a stranger, in trial or loss,

I perchance might be silent; I wouldn't be cross.

No bitterness sweetens, no sharpness may heal

The wound which the soul is too proud to reveal.

No envy hath peace; by a fret and a jar

The beautiful work of our hands we may mar.

Let happen what may, dear, of trouble and loss,

I *wouldn't* be cross, love, I wouldn't be cross.

—Mrs. M. E. Sangster.

### Two Boys.

By RUFUS C. LANDO.

No. 1.—Up and stirring, like a cricket, at the morning's dawn;

No. 2.—Late at rising, long at dressing, with a lazy yawn:

No. 1.—Chores all finished, breakfast eaten, errands done for mother;

No. 2.—Work behindhand, hungry, selfish, cross to little brother:

No. 1.—Clean and tidy, bright and cheery, always first at school;

No. 2.—Grimy, shoddy, dull, and gloomy, wants to be a fool:

No. 1.—Kind to playmates, tender-hearted, loyal as the sun;

No. 2.—Overbearing, and deceitful, rude to everyone:

No. 1.—Quick at figures, apt at grammar, penmanship superb;

No. 2.—Too much trouble to add columns, learning is absurd:

No. 1.—Sought for by the business houses, bookkeeper desired;

No. 2.—No one wants an ignoramus, saucy, careless, tired:

No. 1.—Quick promotion, salary doubled, partnership in sight;

No. 2.—Digging ditches for a living, pocket-book is light:

No. 1.—Grown to manhood, virtuous, prosperous, bears an honored name;

No. 2.—Gall and wormwood, rags and tatters, all unknown to fame.

Which of these, my boy, will *you* be? No. 1, I trust;

Don't be No. 2, and suffer your bright gifts to rust.

(A bright boy of ten to fourteen should recite the above. He should act the two boys in turn: No. 1, bright, alert, erect, and smiling; No. 2, limp and sullen. As he recites the two closing lines, let him suddenly assume great earnestness, and wave his hand toward his schoolmates, including all in the "you.")

The janitor of one of the public schools, coming into the classroom one day saw on the blackboard this sentence, "Find the greatest common divisor." "Hullo," said he, "is that lost again?"

—Kennebec Journal.

## Editorial Notes.

"When I was young we prepared students for life; now we prepare them for examinations," is a bit of truth from Jules Simon.

An eight year old boy surprised his father the other day with the request for a subscription to THE SCHOOL JOURNAL.

*Father:* Why do you want THE SCHOOL JOURNAL? That is written for teachers and not for little boys.

*Boy:* I know that. I just want to know whether I am being educated as I ought to be.

A subscriber writes: "I have taught seven years, and have come to Oswego for further professional training. This is due in large part to reading THE JOURNAL." In olden times ten were healed and one returned to give thanks. Probably 10,000 have been induced to attend normal schools by reading THE JOURNAL. Its one thought is to induce the teacher to make a broader preparation; it urges normal school and college graduates to do this. Everybody who desires others to advance must himself advance.

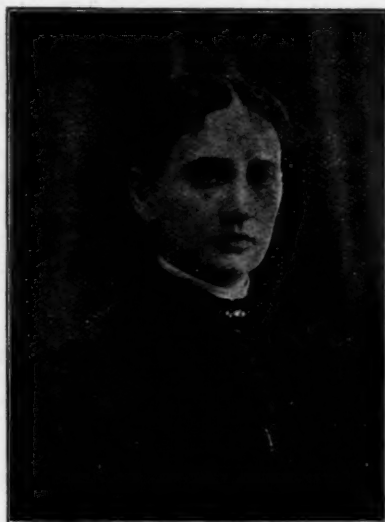
It is now extremely probable that the management of the World's fair will ask congress to extend for fifteen days the time in which it can legally be held open. The attendance has been increasing at such a rapid rate lately, and the financial condition of the country is so improved, that it seems probable that if the fair is kept open for two weeks longer it will materially assist its financiers in making both ends meet.

Saturday, Sept. 30, will be the opening lecture day of the School of Pedagogy, University of the city of New York. Lectures on the History of Education, Psychology, and the Institutes of Education will be delivered in the University building, Washington Square, East, at 10.30 A. M. A cordial invitation is extended to teachers and any interested in higher normal training to attend these lectures and learn concerning the work and advantages of the school, which extends its advantages to all earnest men and women who seek a broad and full preparation for the work of teaching.

A visit was paid by the editor to Mr. T. F. Donnelly at Babylon, last week. He was found in a pretty college facing seaward—hopeful, though much worn down by a sickness resulting from "the grip," caught at the meeting in February last in Boston of the Department of Superintendence. The enfeeblement of the digestive organs that set in, seems to baffle the ordinary remedies. Mr. Donnelly has been a prodigious helper in many parts of the educational field. He was for many years an active worker in the well-known firm of A. S. Barnes & Co., and had the opportunity to extend the friendly hand; this he never failed to do. One incident of many belonging to those helpful years is recalled. A gentleman entered THE JOURNAL office late in November; a new member of a school board would not recognize him as the appointee, claiming that his appointment was by a member of the board and not by the board itself. That evening the matter was stated to Mr. Donnelly. He at once said: "That man must have a place; he deserves it." The next morning this gentleman called on Mr. D., was referred to a school, and appointed as its teacher.

The performance of similar acts of kindness have given him a strong hold on the educational fraternity; warm wishes for his complete recovery are heard everywhere. Letters expressive of strong, friendly feeling make up his present mail.

The teacher will lose a fine opportunity for impressing historical events if he fails to call the attention of the pupils to a celebration that took place in Washington, September 18. It was the one hundredth anniversary of the laying of the corner stone of the capitol by George Washington. This event also marked the beginning of the beautiful and spacious city that has since grown up there. Before this building was erected Congress met in various places. The Continental Congress, as everyone knows, met at Philadelphia. Being driven away from there the members held their sessions in several places, including Nassau Hall, Princeton, N. J.; the Court House at York, Pa.; the Congress House in Baltimore; the old brick hall in Trenton, and the old state house at Annapolis. The constitutional convention, that sat at Philadelphia in 1787, named New York as the first seat of government. The sentimental argument in favor of Philadelphia was, however, overwhelming, but it was finally overcome. There had been an uprising of Pennsylvania troops and a threatening of Congress during the revolution and riots had occurred in New York. It was therefore decided that the new republic should reverse the precedents of the old monarchies, and that its capital should not be a great commercial city. At least a dozen cities and towns put in claims, and Congress wavered for nearly two years between sites on the Delaware, the Potomac, and the Susquehanna. In July, 1790, a bill was passed declaring that the seat of government should be at Philadelphia till 1800 and permanently thereafter on the banks of the Potomac. In 1800, Congress held sessions in the present supreme court-room and law library. The capitol was not finished however, until 1865.



Effie Hoffman Rogers.

Effie Hoffman Rogers, the present superintendent of Mahaska county, Iowa, schools has held the position since January 1, 1890. Under her administration the district schools have been carefully graded, the courses of study judiciously and systematically arranged, monthly examinations introduced, the character of teaching better developed, and its standard raised to a higher level, and the entire system perfected.

Mrs. Rogers is the daughter of Dr. and Mrs. D. A. Hoffman, born in Jackson, Ohio, May 13, 1855. In 1861 her family moved to Oskaloosa, Iowa, their present home; after a few years of preliminary study she was the first lady student to be admitted to Alleghany college, Meadville, Pa.; after one year of study there she entered the female seminary of Mt. Pleasant, Iowa, from which institution she graduated with high honors, June, 1872. Since her husband's death Mrs. Rogers has been engaged largely in newspaper work, either as correspondent, manager, or editor; a work for which her previous wide course of reading had eminently fitted her. During the year 1889 she was a valued member of the Oskaloosa school board.

In her work as superintendent believing that the surest and most successful way of helping a teacher is to lead her to be self-helpful, Mrs. Rogers has organized reading clubs for teachers throughout the county, her purpose being to aid each instructor to self-development not only in her profession, but in her position in society and in home life. In her relations with the teachers she believes in working hand-in-hand with them, helping, advising, directing, never scolding nor fretting, giving them out of her broader and richer experience just that kind, tender counsel a mother, sister, or friend might give; yet she is strongly influenced by a spirit of justice as well as generosity, and while she has unbounded sympathy for honest failure preceded by earnest effort, she has no toleration for indifferent preparation of work for, or listless action in the giving of lessons in the school-room.

During the four years since Mrs. Rogers has been superintendent, Mahaska county normal institute, held at Penn college, Oskaloosa, Iowa, has been her pride, and she has spared neither time nor strength, nor reasonable expenditure, to make the work of practical value to the corps of instructors who enroll as pupils during the summer session, calling to her aid the best known and ablest instructors possible as the faculty.

A normal school congress was recently held at Minneapolis, Minn. About sixty were in attendance. President Edward Searing, of the Mankato normal school, presided. The first question considered was, "Are the present courses of study of the Minnesota normal schools the best in time and contents?" General satisfaction was expressed. The next subject, "Is co-ordination of the university and normal schools practicable and desirable?" The consensus of opinion was that it was both practicable and desirable, and a suggestion was made that a meeting of the faculties of the university and normal schools be held to consider such an arrangement.

In answer to the question, "Can entrance conditions be improved, and how?" it was said that they might be bettered by improving the common schools. Among those who took part in the discussions were President G. S. Albee, of Oshkosh; President Hull, of River Falls; President Joseph Carhart, of St. Cloud; President Irwin Shepard, of Winona; Prof. Barton, of Cumberland Valley, Pa., normal school, and Hon. O. H. Wells, state superintendent of Wisconsin.



Tufts college has decided to open a medical department to which both sexes will be admitted.

Miss Bertha Lamme, of Springfield, O., recently received a degree of electrical engineer at the Ohio state university.

There are five young Chinese studying medicine in the University of Michigan; among them two young women who mean to return to their country as missionaries.

None but a Boston paper would remark that while it was a good thing for a woman to do her own sewing, she would be apt to get into many bad habits. See the point?

A plain matter of fact boy was asked what was the difference between decimal and common fractions; he replied promptly and with the air of that question being almost too easy: "Oh, a decimal fraction has a point, and the other hasn't."

J. U. Barnard, A. M., of Cape Girardeau, Mo., who has been a member of the Faculty of the Third District state normal schools of Mo., has been appointed to the chair of pedagogy in the University of Mississippi.

"I wonder," thought Frank as he awakened in the country early in the morning, "whether that rooster tells the sun when to get up or the sun tells the rooster. I wish they'd both wait until I was ready."—*Harper's Young People*.

"What I want," said the young man showing his father his college diploma, "is a wide field." "Good!" said his father, "that big lot needs plowing awfully; take the two mules and begin; you have come from college to help at the right time, I see."

Miss Alice G. Friedlander, the bright young editress of *The Student*, at Portland, Oregon, has been invited to deliver an address before the editors of the states of Washington and Oregon, who will convene in Portland at the Exposition building on September 28.

A Chinese college student recently visited a young woman in Washington. He was invited "to call again soon." He did so in about a half an hour. Travelers have often lauded the punctilio of educated Orientals, but we never suspected that this included even college boys.

The news comes from Lafayette college that three sophomores have been suspended for hazing. These men, supposed to have all the culture of the nineteenth century, tried to make certain freshmen sick by smoking. Such fellows do not belong in a college.

The late Mr. A. J. Drexel's estate is valued at \$30,000,000. By his will the sum of \$1,000,000 is placed in the hands of trustees who are empowered to erect and maintain an art gallery, museum, or other public institution in the vicinity of the Drexel institute, or in their discretion to apply the income to the support of the institute should this be necessary for the full development of its work.

A.: Aren't you going to the World's fair?

B.: Can't. Too much business.

A.: Why don't you stop advertising in THE SCHOOL JOURNAL for a time. You will be surprised how quickly business will fall off.

B.: Capital idea that. Never thought of it.

London, Ont., has eight public kindergartens; about 500 children are enrolled. A fee of ten cents a month is charged for each child, and this covers the running expenses. Miss Agnes E. Mackenzie, to whose labors the success of the work is principally due, has charge of the largest of the kindergartens and supervises the others. She has now nineteen assistants and a training class for kindergartners.

The Sons of the American Revolution have discovered that the one who has the best claim to be the nearest living relative of George Washington is Ebenezer Burgess Ball, who keeps a little cigar stand in the rotunda of the pension office. It is said that he resembles Washington's portrait much more closely than any other person claiming relationship, and pictures taken of him dressed in the continental uniform have been mistaken by many for representations of Washington himself.

Miss Mary Proctor, the daughter of the renowned scientist, the late Prof. Richard A. Proctor, is making arrangements to give a series of lectures on "Astronomy for Children" all over the country. The course consists of three lectures for children entitled: "The Goblins in Starland," "The Stories of the Stars," and "Giant Sun, and his Family." She will also deliver a lecture specially suitable for normal schools, on "How to Teach Astronomy to Children." She delivered these lectures at Chicago, during the World's fair, and met with great success.

When school begins the birds begin to leave too for the South. Away goes the little kingbird to Florida, Texas, and Mexico, the hummingbird, the bluebird, the wren, the hedge and chipping sparrows, some varieties of the swallow, and most members of the warbler family, the robin (robin redbreast), the ground

robin, and the cuckoo. The ground robin in Louisiana, is shot for food. The cardinal grosbeak, or Virginia nightingale, and the linnet prefer Texas. The finches stay until December or January. Are you watching them?

A wrong form of treatment—the very worst sort of treatment, in fact, is that which breaks a boy's spirit, and that seems to be the sole method practised at the Elmira (N. Y.) reformatory, writes the *Buffalo Express*. What use is a cringing coward to society? Why spend so much time and money merely to turn thieves and truants into hypocrites and sneaks? The broken spirited ex-convict is a greater menace to society than was the original raw material, for he has learned to cloak his evil instincts in the garb of hypocrisy, and thus longer to escape detection and punishment. Any reformation which is accomplished at the expense of the convict's remaining shreds of self-respect is no reformation at all. It is ten times more diabolical than his former state.

The spelling reformers are as hard at work as ever. At the recent stenographers' congress held at Chicago, Mrs. Eliza B. Burnz read a paper on "Foundation Stones," in which she made a strong plea for the introduction of a simple, economical, and rational orthography of the English language. A resolution was passed to have all papers read at the congress printed in revised spelling. The papers of Mrs. Burnz and Mr. J. R. Price had already been prepared in Century Appendix Spelling. Miss Ballantyne, of Rochester, Mr. Tombo, of New York, and several others expressed the wish to have their papers also pruned of redundant letters. Mrs. Burnz distributed a considerable quantity of reform leaflets.

Prof. Rufus Clark, principal of the normal school at Winchester, Tenn., of 300 pupils, says: "As an educator, I am prepared from my own experience and observation to say I am convinced that the use of tobacco is an injury physically. I believe it is an injury morally. I know that it is an injury mentally. Fortunately, we have few students who use tobacco, but when one does use it he shows it in his standing in class. If there is an exception to this statement, if a young man does maintain rank in his recitations, and is still a user of tobacco, he is one who has such natural mental ability that if he did not use it he would so far distance his classmates that he would soon be out of sight. I can go through this school and put my hand on every young man that uses tobacco, for he shows it in his face, and if I am in doubt, I can prove my surmise by looking at his recitation marks."

Gladstone's daughter, writing of her father's habits, says: "He usually has three books on hand at once, of various degrees of solidity, the evening one probably being a novel. Aristotle, St. Augustine, Dante, and Bishop Butler are the authors who have most deeply influenced him; so he has himself written. Once in bed, he never allows his mind to be charged with business of any kind, in consequence of which he sleeps the sound and healthy sleep of a child, from the moment his head is on the pillow until he is called next morning. This absolute power over his thoughts, won by long and strict habits of self-control, must be one of the principal causes of his freshness and youth. As an instance, he went home in the early morning after the defeat of the Home Rule bill of 1886, and slept as usual his eight hours."

Hull house, Chicago, is one of the most successful university settlements in this country. It is situated in a district that has a population of about 50,000. The people who live there are of all races and creeds. The streets were dirty, the schools inadequate, factory legislation unenforced, the street lighting bad, and the stables defying all laws of sanitation when the settlement began its reform work. Since then a great change for the better has taken place. At Hull house lectures are given every night. A savings bank is in operation. A kindergarten is also in operation and is doing good work for the education of the little ones and their mothers. The good that has already been accomplished by the settlement should be an encouragement to extend the work to other parts of the city that are just as much in need of uplifting as the district in which Hull house is located.

"There is just one universal language," said a traveler, "and that is the language of young childhood. The little child communicates freely and without difficulty in its infantile tongue with whoever it may meet that may catch its fancy. Thus, on the train this morning, I saw a little American of maybe six or eight months, who couldn't speak any language at all, conversing actively with a big man with a kindly, cheerful face who sat in the next seat back and could speak nothing but German. The little child laughed and waved its hand at the big man animatedly and said 'Goo,' or something of that sort, and appeared to be enjoying the conversation immensely. The big German chuckled the little child gently under the chin and laughed, too, saying at the same time something that seemed to please the child greatly. And no doubt this child would have conversed with equal confidence and facility with a stranger met in Spain or in London, or anywhere else on the face of the earth, being for the time a citizen of all the world. Not until he shall have grown older and have learned a spoken language, will he be hampered by his environment and measurably isolated among his own people."

Some time ago THE SCHOOL JOURNAL published two articles on "Indian Geographical Names." The following might be given in connection with information lessons on that subject: The word "Adirondack," says the *Utica Herald*, is derived from the Indian *Ha-de-ron-dack* (meaning wood eaters), and applied in derision to the remnant of a once powerful tribe of Algonquins, who were defeated in war by the Iroquois, and forced to seek refuge in the New York wilderness, living for weeks upon the bark and roots of trees, and finally ending their existence there. The name was first given to the several ranges of mountains, and finally adopted for the wilderness as well. The name Adirondacks is applied to the greater part of that portion of the state which would be included in a circle centering at the north-eastern corner of Hamilton county, and portions of Herkimer, Lewis, St. Lawrence, Franklin, Clinton, Essex, and Warren counties, although the section generally known as the Adirondacks plateau, or mountain region proper, is contained within about 75 square miles. It has an elevation of about 2,000 feet above the level of the sea, and is traversed by five distinct mountain ranges, with well-defined intervening valleys. Over thirteen hundred (1,350 is said to be the actual number) lakes and mountain ponds are scattered throughout its area, while from its central watershed twenty rivers diverge in every direction, and smaller streams are here almost without number.

The "Faribault plan" (the placing of parochial schools under the public school authorities) has ceased. Father Conroy, who, on October 22, 1891, transferred the parochial schools to the school board of the city of Faribault, appeared before the board, September 13, and said that the Catholics of Faribault could no longer consent to the assignment of two Protestant teachers to the parochial school, so the board of education annulled the lease, and all Protestant children left the school. The two Protestant teachers left also, and henceforth it will be conducted as a parochial school. The same action was taken in Stillwater, where a parochial school was transferred to the board of education. This plan suited neither the Protestants nor the Catholics. The Protestants asserted that the Faribault plan was an effort of Catholics to get secular as well as non-secular instruction at the expense of the state. Hitherto they had been compelled to pay for the maintenance of their schools, but now the state would have to support them. The Catholics said that Catholic children would forget their religious instruction and become Protestants. Archbishop Ireland, the promulgator of the plan, went to Rome and secured the approval, or at least the toleration, of the Holy See for the plan. The plan was not popular in Faribault; in July, 1892, nine of the Protestant teachers resigned, dissatisfied with its workings. The feeling is against it, as the sentiment is strong that the Catholics favored the plan because it saved them the expense of supporting the school.

The Congress of Religions at the World's fair showed the progress the world has made in toleration within a few years.

First came Cardinal Gibbons; then Archbishop Redwood, of New Zealand; Archbishop Dionisios Latas, of Greece; Rev. Henry Barrows, of Chicago; Archbishop Feehan and Count A. Boinstorff, of Berlin; Dr. Carl von Bergen, of Sweden; Professor C. N. Chaharar, D. Dharmapala, and P. C. Moozomdor, of India; Rev. Augusta J. Chapin, of Chicago; Rev. Alexander D. McKensie and Pung Quang Yu, of China; Dr. E. G. Hirsch, of Chicago; Miss Jeanne Serabji and Khersedji Laugraua, of Bombay; Bishop B. W. Arnett, and Mrs. Laura Ormiston Chant and others.

The vast audience arose and joined in singing "Praise God From Whom All Blessings Flow," Cardinal Gibbons led and all recited the Lord's Prayer.

Archbishop Feehan welcomed the delegates on behalf of the Catholic church. He said that the assembly was one unique in the history of the world. Learned men had come from all countries to speak and to tell us of those things that were of the greatest interest to all—of God, of his truth and justice, of peace and of mercy.

Cardinal Gibbons said that though all did not agree on matters of faith, there was one platform on which all were united—that was charity, humanity, and benevolence. He could not impress too strongly on every one that each was his brother's keeper. That was the whole theory of humanity. If Christ had cried with Cain, "Am I my brother's keeper?" we would still be walking in darkness. No speaker on the program was greeted with such applause as was Pung Quang Yu, secretary of the Chinese legation at Washington. Nearly half the people in the hall rose and cheered and waved their handkerchiefs as he advanced to the front of the platform.

### Newark, N. J.

Supt. Baringer says: "The plan of judging the spelling by the pupils' use of words in the dictation and written exercises instead

of selected words in columns, committed to memory for the only purpose of spelling them, will no doubt, in due time, correct the failure to spell the words in common use.

"The basis for promotion has three elements: the daily class record, the semi-annual examination, the annual examination; each has an equal value. One of the best school exercises I know for this purpose (to teach language) is to frequently require the pupil to relate or tell in a conversational manner, in clear and simple language, incidents found in his own experience, or give descriptions of what he has seen or heard, or anything with which he is familiar."

The Newark normal school has a two years' course. Among the subjects studied are these: Psychology; theory and practice of teaching; training school practice, primary grade work, including penmanship; lectures on the science and philosophy of education and the methods of instruction to be continued through the year; elementary science; music; physical culture; voice culture and elocution; drawing; moral science; history of education, its theories, methods, and literature; general history; review of the general principles and methods of teaching and school management; lectures and discussions of educational works and educational questions; and to spend eight weeks under the supervision of the principal in the practice school.

### Free Kindergartens in Maine.

The first step towards establishing free kindergartens in Maine was taken by the Women's Alliance of Bangor, Me., in the spring of 1891. A summer kindergarten was opened that year. In order to enlist more general interest last Christmas the mothers were invited by the alliance, to see what was being done with their children. Many accepted the invitation and the interest in the work was much increased. The principal promotor of this work is Mrs. Charles Woodman, who said in a recent address to the women of Bangor: "Perhaps you are asking what is really being done that is of practical benefit to the children of the city; and I would reply that we are fitting them for public school life, by training the powers of observation and attention, developing the mental capacity, and teaching them how to adapt themselves to the great outside world they are just entering; for it is a great world and a great event to the child, when he leaves the nursery and the dooryard to join in the life outside. Do we realize how great the change is to him, I wonder?"

A kindergarten association has been formed that supports several free schools, and in addition, a day nursery, where children of any age, too young to be left alone can be cared for from 7 A. M., to 6 P. M., by competent women. Food is furnished when necessary with toys for waking hours. In addition to this work the association has arranged for the organization of a class for the study of kindergarten methods under the direction of Miss Blanche Boardman. It is to open October 2, and continue through this year. At the close of the term, certificates will be given to those who satisfactorily complete the work given. All of this places Bangor foremost among the cities promoting kindergarten education.

### Degrees in Education.

Last year Professor Sully, the well known author of his Psychology, moved in the Counsel of the University of London, of which he is a member, "that it is desirable that this university should recognize by the institution of a high degree, that considerable and important branch of knowledge which has received so much development during the recent years in connection with the scientific study of education." This motion was lost by one vote. It is probable that this question will be proposed again this year, when it is highly probable that it will be favorably considered, and the University of London follow the example of the University of the City of New York in giving high degrees in education.

### New York State.

Many Brooklyn school teachers are likely to lose some of their pay for the month of June as an incident in the failure of the Commercial bank. The checks were sent to the teachers several days ahead of the closing of the month, and should have been deposited within five days after they were received, in accordance with a rule of the department. Those teachers who did not draw their money before the suspension of the bank will have to share the fate of the other depositors.

The expenditure by the state for buildings, repairs, sites, etc. in cities and country was \$3,925,191; number of pupils, 1,845,519; teachers' salaries, \$11,521,066; average weekly salary in cities, \$18.75; in the country, \$8.38. The state school tax is fixed by the legislature at one mill on each dollar of valuation. To this is added the income from the common school fund and the U. S.



deposit fund. The annual appropriation for the support of the common schools was \$3,500,000; for normal schools, \$235,300; for training classes, \$60,000; \$30,000 for teachers' institutes, \$11,500 for school commissioners' salaries, and \$5,200 for school registers.

Cities and incorporated villages of not less than 5,000 population, and union free school districts employing a superintendent get \$800 each, with \$500 extra for each additional member of assembly from a city; school districts get \$100 for each qualified teacher, the remainder of the school moneys is distributed according to average days' attendance. The teachers number 32,161. The average length of school year is 37 weeks.

### New York City.

The evening schools for the term of 1893-4 will open on Monday, October 2.

Supt. Jasper estimates the number of pupils who will attend the grammar and primary schools this fall to be about 155,000. Three new schools have been opened and annexes have been built to several. The number of teachers who reported for duty yesterday was 3,700, an increase of 120 over the number at the same time last year.

Mr. Byrnes, the superintendent of police is taking good care of the school children of the city. Every morning, up to the time when school assemblies, and in the afternoon after dismissal, policeman are detailed to patrol the crossings of streets within a radius of four or five blocks leading to the school-houses to assist the little ones across thoroughfares and protect them against reckless drivers of street cars, cabs, carts, and other dangers which beset them. A stalwart policeman, having an urchin by each hand and others huddled up close in front of him, or tugging at his coat tails behind him, leading a merry little crowd across to safety is a sight that might furnish an artist with a very pleasant subject for a sketch. The thoughtful attention of Supt. Byrnes will go far toward lessening the anxiety of parents for the safety of their little ones. It is very seldom that one hears of children injured while going to or returning from school. It would be well to extend police protection to all parts of the city.

Physical training is destined to be a marked feature in the New York schools. Dr. J. Gardner Smith is physical director in charge of the uptown schools, while Dr. Barrett takes those in the downtown district. During this month the children will be subjected to physical examinations, and next month the gymnastic and calisthenic work will begin. Dr. Smith at the congress held at Washington read a paper on the physical training of school children. He said, "Physical training is an almost imperative necessity. The faulty sitting and standing positions so often observed in school children, their awkward gait and difficulty in breathing when speaking and singing need only be noted to emphasize the necessity of physical training. At an examination of 2,000 school children in New York a chest expansion of less than one inch was discovered, while such expansion nearly doubled after eight month's physical training."

"The Swedes have an arbitrary system of progression, and the Germans a popular system of gymnastics. In America we need an American system, culling the best from both systems and basing it upon sound physiological principles. The sex of the children, the condition of the school buildings, and the gymnastic apparatus should be considered. The system ought to comprise training in sitting and standing positions, breathing, marching, walking, calisthenics, light and heavy gymnastics, and games. The exercises should be graded respecting the difficulty and strength to the various grades of instruction, running from the primary to the very highest school."

### The Last Series of Cheap-Rate Excursions to the World's Fair via the Pennsylvania Rai road.

#### ADDITIONAL DATES FOR THE POPULAR EXPOSITION TRIPS.

As the period of the existence of the World's Columbian Exposition draws to a close, the demand grows stronger for the economical and satisfactory means of reaching Chicago provided heretofore by the Pennsylvania Railroad Company. Recognizing the urgency of this popular need, that company has fixed a few additional dates on which excursions of the same character as the previous ones will be run. September 19th, 23d, 25th, October 2d, 11th, 17th, and 21st are the days selected from New York, Philadelphia, and points east of Pittsburg and Erie, and north of York.

The special trains will be composed of the standard coaches for which the Pennsylvania Railroad Company is noted, and the arrival in Chicago at an early hour the following afternoon obviously gives ample opportunity for the securing of accommodations at that place.

The trains will leave New York 9:00 A. M., Jersey City 9:13, Newark 9:25, Elizabeth 9:32, New Brunswick 9:53, Trenton 10:23, Philadelphia 11:30, Frazer 12:09 P. M., Downingtown 12:25, Parkersburg 12:41, Coatesville 1:03, Lancaster 1:25, Conowingo 1:57, Harrisburg 3:00 P. M., Lewistown Junction 4:30, Tyrone 6:00, Altoona 7:00, and Pittsburg 10:40 P. M. The excursion rate, good only on the special train and valid for return within ten days, is \$20 from New York, \$18.25 from Philadelphia, and proportionately low from other stations. Return portions of tickets are good for ten days.

These trains will be run on fast schedule, and will be provided with all modern conveniences with the exception of Pullman cars.

Many expressions of complete satisfaction have been made by people who have availed themselves of this excellent opportunity of visiting the greatest and grandest exhibition the world has ever seen.

### Things to Tell Pupils.

England shows at the World's fair the largest lump of coal ever mined. It is a monster specimen weighing 11 English tons and 14 hundred weight, and containing 350 cubic feet.

The side of a tree on which most of the moss is found is the north. If the tree is exposed to the sun, the heaviest and longest limbs will be on the south side.

A pound of rice contains 86.09 per cent. of nutritive matter, against 82.54 per cent. for wheat, 82.79 per cent. for rye, 74.2 per cent. for oats, 82.97 per cent. for corn, 23.24 per cent. for potatoes, 46.03 per cent. for fat beef, and 26.83 per cent. for lean beef.

Iceland has about seventy-three thousand inhabitants. Men and women are political equals. The mothers teach the future citizens and in all the island there is said to be not an illiterate after the age of seven; there are no prisons, no police, no extremely rich and no extremely poor.

It is proposed to build an immense bridge over the Mersey river, in England, connecting the cities of Liverpool and Birkenhead. According to descriptions in the Liverpool newspapers, the bridge will be of the arched suspension type, in three spans, the roadway being suspended from an arch instead of the usual chain.

James Glaisher, the well-known Scotch meteorologist, asserts, after long investigation, that the ninth day of the moon is the most rainy of the whole twenty-eight, and that in the first and the last weeks of the moon's age the rainfall is less than the average. The records kept by Mr. Glaisher also indicate four o'clock in the afternoon as the rainiest hour of the day.

The renowned French scientist, M. Berthelot, has found evidence that a copper age existed before the discovery of bronze. A piece of copper from Mesopotamia, taken from ruins more ancient than even those of Babylon, proves to be free from both tin and zinc; while a piece of a metallic scepter, supposed to have belonged to a Pharaoh in Egypt some 3,500 years before Christ, is also shown to be nearly pure copper.

### Geographical Notes.

*Where Three Empires Meet.*—This is the title of a very interesting book that has recently been published. The place referred to is the vale of Kashmir; the empires India, China, and Russia. This region is in the midst of those sublime mountains, the Himalayas; the summers are torrid; the winters are arctic. The valley lies more than 5,000 feet above the sea, is of oval shape, and one hundred miles long by twenty wide. Many winding streams intersect in a vast plain of green, while above and beyond them all is a circle of great mountains. The Indus river flows through the valley in the most winding way possible constantly doubling back on itself in long loops. It very much resembles the well-known pattern of Kashmir shawls, and natives say it was the course of the river as seen from neighboring heights that first suggested the pattern. The Kashmiris are cowardly in the extreme, in spite of the fact that they profess the most military of religions—Mohammedanism.

*Another Proof that the Earth Rotates.*—It is an interesting fact that artillerymen in firing have to take into account the earth's rotation. Firing from the north to south there is a divergence of projectiles to the left due to the earth's rotation, and firing due north the divergence is to the right. The extent of the "pull" varies at different points on the earth's surface, and with projectiles fired at different speeds and elevations. In England a deflection of five inches is found to occur with the projectile of a 12-pounder in a 4,000-yard range.

*The Height of Mount St. Elias.*—Last year the U. S. coast and geodetic survey sent J. E. McGrath and J. H. Turner to the St. Elias region for the purpose of making thorough observation to determine the position and height of the great mountain. They found the summit of St. Elias to be 60° 17' 35" north latitude, and 140° 55' 21.5" west longitude. The height of the mountain, as computed from trigonometrical measurements, made at five different stations, varied from 18,000 to 18,017 feet, and the adopted mean is 18,010 feet. This figure, which is believed to be practically correct makes the height 89 feet lower than Russell's measurement made it. The Orizaba peak in Mexico has been carefully measured and has been found to be 18,314 feet high, so that hereafter Mount St. Elias must figure as the second highest mountain in North America.

*Garnets from the Sea.*—After a great storm recently the keeper of the New London (Conn.) lighthouse found that the beach was covered with red sand. He sent some of it to Prof. Bolton, of Columbia college, who pronounced it pulverized garnets mixed with mineral matter. The peculiar thing about the garnet sand find is that no one knows of any garnet deposit anywhere along this coast, and it is supposed that the sand that came ashore at New London is from a distant mine of garnets in the ocean.

## Important Events, &c.

Selected from OUR TIMES, published by E. L. Kellogg & Co.; price, 30c. a year.

**Hurricane on the Azores.**—The island of Fayal, one of the Azores, has been swept by a hurricane that almost destroyed the city and did very much damage.

**Plenty of Seal Skins.**—An estimate made by the United States consul at Victoria puts the seal catch of the present year, in the Bering sea district, at 100,000.

**China Protests.**—The Chinese government protests against the new aggressions of France in Siam, and has given orders that the Chinese squadron of iron-clads be made ready to sail at a moment's notice.

**Decline of the G. A. R.**—At the recent Indianapolis encampment more than 20,000 men marched in the parade. For the first time in the history of the G. A. R. its roll showed a falling off. There are 2,000 less members than in June, 1882. At present there are 397,223 members in good standing, and 543,554 in all.

**Utah and Nevada may be United.**—A bill has been introduced into Congress to annex the territory of Utah to the state of Nevada. The population of Nevada decreased from 70,000 in 1880 to 42,000 in 1890 (in round numbers) and there is no prospect of its recovering any part of what it has lost. If the silver-mining industry be further diminished, there won't be 20,000 people in the state in five years. Utah, on the other hand, has 240,000 population and it is increasing.

**The Columbus Caravels.**—These imitations of the ships of the great discoverer have been transferred to the United States. It will puzzle the secretary of the navy to know what to do with them, as the largest of them is hardly as big as an Erie canal boat.

**Nine-inch Armor Easily Pierced.**—Last year our ordnance experts were delighted with tests showing the apparent impregnability of improved nickel-steel armor. In the experiments made lately at Sandy Hook, with shot eight inches in diameter and twenty-eight inches long, the armor was pierced as if with an auger. The shot were practically perfect and might have been used again.

**Death of a Bonaparte.**—Jerome Bonaparte, a grand nephew of the great Napoleon, died lately at his summer home in Massachusetts. He took part in the siege of Sebastopol, and was present at the battles of Balaklava and Inkerman. In the Italian campaign against Austria he served with distinction in the battles of Montebello and Solferino.

### MORE REVENUE NEEDED.

In spite of the enormous amount of money paid to the U. S. government through tariff taxation, the expenses of the government have increased so much within the past three or four years that there is actually not money enough to meet expenses. David A. Wells, the expert in taxation, advises an increase of the tax on fermented liquors and tobacco. This would yield \$60,000,000 more revenue a year, without putting a dollar more tax on the necessities of life; furthermore, it would allow the reduction of the tariff on many necessities, now taxed.

### MANY RELIGIONS REPRESENTED.

That the era of "peace on earth and good will" is approaching is shown by the scene at the opening of the World's Parliament of Religions at Chicago. The procession was one that would have been impossible not many years ago. Jew marched with Gentile, and Catholic marched with Protestant. The religious beliefs of India, of China, and of Japan were represented, as well as those of the English-speaking nations. All, attired in their priestly robes and wearing the insignia of their office, marched in fellowship to the platform, while the audience rose and cheered at the sight.

### PROTECTING THE SEAL HERD.

The decision of the arbitrators vastly increases the labor of guarding the seal herd. Formerly the area to be watched was Bering sea, east of the treaty boundary; and the seal herd does not enter that sea until the early days of July. Now, however, pelagic sealing is forbidden from May 1 until July 31, inclusive, not only there, but in the whole of the North Pacific, east of the 118th meridian of longitude and of the treaty line, and north of the 35th degree of latitude. Our country must practically furnish an escort for the seals throughout their annual migration north-

ward along the coasts of California, Oregon, Washington, and British Columbia, during a period of two months. When the seal herd arrives at the Prebilov group the fleet must patrol for a distance of sixty miles from those islands. It is probable that the United States will create a permanent fleet for this patrol duty.

### DISPUTE OVER A RIO GRANDE ISLAND.

A dispute has arisen between the United States and Mexico over the possession of an island in the Rio Grande river, above Matamoras. The county judge of Hidalgo county, Tex., says he will be glad when the dispute is settled because outlaws escape to the island and there defy the officers. He asserts that it belongs to Mexico. The river by changing its course has cut the island off from Mexican territory and left it on the Texan side. Since then it has been claimed by Texas.

### PEARY IN WINTER QUARTERS.

The latest report from Lieut. Peary is that he is well established in winter quarters at the head of Bowdoin bay, whence he will make his great overland journey next spring. He got dogs in Labrador and plenty more in Greenland; he made the quickest passage on record across Melville sound and reached his destination August 3. Immediately he set about hunting deer as a winter's stock of meat, and walrus as food for the dogs; exploring will follow. Peary expects to accomplish his great work of exploring in Greenland in a single season.

### AN EX-SECRETARY OF STATE DEAD.

Hamilton Fish died at his country home near Garrisons, N. Y., September 7, at the age of eighty-five. His career as governor of New York, senator, and member of the cabinet was an honorable one. As secretary of state under Pres. Grant he conducted the negotiations in regard to the *Alabama* claims. This matter was finally settled by the Geneva court of arbitration. Mr. Fish managed the affair with great ability and tact.

### THE LATEST CUNARDER'S WORK.

The first trip westward of the new Cunard steamship *Lucania* was made in 5 days, 15 hours and 34 minutes. The first steamship that this same company sent across the Atlantic was the *Britannia*, which made the voyage in fourteen days. While the saving in time is not far from 60 per cent., the tonnage is more than a dozen times what it was, the *Britannia* being registered at 1,156 tons. The engines of the latter developed only 710 indicated horse-power, while those of the *Lucania* are credited with 30,000. Comparisons also show that the consumption of coal on the *Lucania* each day is almost ten times what the *Britannia* used, but then it is evident that each ton now does far more work than a ton did fifty odd years ago.

## Science and Industry.

**Airtight Steamships.**—An Englishman has devised a method of indicating and stopping a leak in a ship by means of compressed air. He divides a ship into airtight compartments fitted with doors provided with packing material and connected by tubes with a room on deck, called the "switch room." In this room is a junction chest supplied with compressed air from fixed or portable compressors, and so arranged that the air can be delivered to any of the compartments. Electric indicators show in which apartments there is water, and then the compressed air can be forced in to drive it out.

**Iowa's Corn Building.**—Just now when corn is being discussed as the national flower it will be of interest to know how Iowa has used it in constructing the state building at the World's fair. In the main hall ruddy and golden corn-ears and cobs successfully simulate the dainty saffron of old laces and the faded maroon of time worn velvets, and where the eye catches mellow shafts and fugitive glints of dim color, rarely seen save in the dusky aisles of old cathedrals. At either end of the hall is a large American eagle wholly in various tints and hues of corn, the beak and legs golden, the outstretched wings in red kernels, shading off to a tint as delicate as the heart of a sea-shell.

Twelve massive columns, swathed in oats and grasses, studded with mosaic cubes of colored corn and fluted at the capitals with millet heads, support the high ceiling. Extending round the hall near the windows are twenty-four smaller columns wrought in wheat. Four large panels represent four leading industries of the state,—stock-raising, dairying, mining, pottery,—so faithfully done in cereals as to resemble great pictures. The mining panel portrays a sturdy youth in a shirt of red corn, trousers of millet heads, and cap from seeds of various kinds. The dairy panel represents a girl of comely face in light corn husk, a dress of red cobs, and tresses of brown corn silk. The cow by her side is in millet heads. Three cows and a calf, also in millet, adorn the stock panel. The panel depicting pottery sets forth a young artisan, in a Roman



cloth of tinted corn, in the act of fashioning an urn, made of fine seeds. Other pieces represent music, art, astronomy, and literature. In the southwest corner of the hall is located a balcony, for a band or orchestra; and here are several really wonderful designs wrought of corn-cobs and grape-vines.

**Pickering's Sky-Maps.**—Prof. Pickering, of the Harvard observatory, is to have a great telescope mounted at Arequipa in the heart of the Andes. From this point the whole circle of the heavens may be seen, and he intends to make complete sky-maps. He has provided 1,000 photographic plates, each plate covering 25 square degrees, to secure material for the maps. The work will occupy him from one to two years. With an hour's exposure for each plate, the task would be completed in one year; but in case more time shall be required, he will have to trench on the second year. In addition, he is to secure the spectra of all the stars. When his work is completed, Prof. Pickering expects to be able to construct an astronomical map superior to anything of the kind hitherto known.

**A Speaking Watch.**—An ingenious watchmaker of Geneva, Switzerland, has invented a watch in which he uses the phonograph to tell the hours. In the cavity of the case is a phonographic plate on which the hours and quarters have been marked by grooves. If the dial points to 12.15 for instance, a steel point drops into the corresponding groove on the simultaneously rotating plate, upon which "12.15" is then spoken, just as by the phonograph.

**The Power of Telescopes.**—Prof. Holden says: that if the brightness of a star seen with the eye alone is one, with a 2-inch telescope, it is 100 times as bright; with a 4-inch telescope, 400 times; 8-inch telescope, 1,600 times; 16 inch telescope, 6,400 times; 32-inch telescope, 25,600 times; 36-inch telescope, 32,400 times. That is, stars can be seen with the 36-inch telescope which are 30,000 times fainter than the faintest stars visible to the naked eye. While the magnifying power which can be successfully used on the 5-inch telescope is not above 400, the 36-inch telescope will permit a magnifying power of more than 2,000 diameters on suitable objects, stars, for example. With such a telescope the moon appears the same as it would with the naked eye 200 miles away. This is the same as saying that objects about 300 feet square can be recognized, so that no village or great canal, or even large edifice, can be built on the moon without our knowledge.

## New Books.

A collection of essays, most of them short, on English literature, that have appeared in such publications as the *Gentleman's Magazine*, the *Athenum*, the *Academy*, *St James Gazette*, etc., by Prof. John W. Hales, M.A., of King's college, London, has appeared in a volume of 367 pages under the title of *Folio Litteraria*. Of course it makes no pretensions to being a history of our literature, yet it is on that account all the more interesting, as it goes out of the beaten path to discuss matters that are not usually found in the histories. An insight into the scope of the work will be given if we mention some of the subjects, as Old English metrical romances, Dante in England, Chaucer at Woodstock, Chaucer notes, Chevy Chase, Wyatt and Surrey, Milton's *Macbeth*, Milton and Gray's *Inn walks*, Bunyan, the revival of ballad poetry, the last decade of the last century, Victorian literature. The author is a careful and discriminating critic. His attractive treatment of the subjects will render this book a valuable supplement to the standard histories of English literature. Every literary student should have it in his library. (Macmillan & Co., New York. \$1.75.)

Professor Alphonso G. Newcomer, of the Leland Stanford Junior university, has prepared *A Practical Course in English Composition* that, if carefully pursued, will help the pupil to cultivate a good English style. The author does not believe in aiming over the pupil's head. Giving him a specimen from a master of English, like Ruskin or De Quincey, to imitate is apt to result in an over-strained and unnatural style of writing. The first examples for the pupil to imitate are therefore less pretentious, often compositions that have been written by pupils themselves. Part I. consists of compositions based on experience and observation, including narration, description and narration and description combined; Part II., compositions based on reading and thought, comprising exposition, argumentation, and persuasion; Part III., miscellaneous forms, as news, editorials, book reviews, letters, diaries, dialogues, humor, and the short story. There are no rules in the book—simple directions, subjects, and examples. The absence of rules is a good thing, as the pupil is left unhampered. The book is intended for use in high schools and academe.

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mies, and the lower classes in universities. Its plan is excellent and well worked out, and it will be a very substantial aid in the class-room. (Ginn & Co., Boston.)

The art student begins, not by memorizing a collection of rules, but by studying the works of the masters. It has been too often assumed that one could become a master of the art of English composition by studying rules of grammar. That this method has resulted in failure is not strange. James H. Penniman, author of the little book entitled *Prose Dictation Exercises*, believes that the systematic study of masterpieces of English will be of the greatest benefit to those who wish to form a good style. In this little book are extracts from the writings of Lowell, Hamerton, Franklin, Addison, McMaster, Defoe, Hawthorne, Hunt, Irving, Prescott, Wilson, Bancroft, Jefferson, Emerson, Macaulay, and others. These are to be studied, discussed, written, and the exercises corrected. Without doubt, when this book is completed the pupil will have a better idea of what good literature is, and will be able to produce better specimens of English himself. (James H. Penniman, Delancey school, Philadelphia)

In the Interstate Series of Readers the publishers have endeavored to bring out a set of reading books to meet the demands of the several ages of the scholars for which they were intended, arranged by the best authorities on the subject. The primer, and first and second reading books have met with a cordial reception. The publishers now have ready the *Interstate Third Reader*, prepared by Miss Mary I. Lovejoy, an expert in the field, who has long been working at the problem how best to teach children to use their reasoning powers, and to exercise the thought-faculty in acquiring the use of good English. Miss Lovejoy has the trained eye and hand that go with experience, while her marked ability in presenting theories, and illustrating them in class-work, has long been accepted. In regard to subject matter, typography, and illustrations this book is a very attractive one. (D. Lothrop Co., Boston. 40 cents.)

A small volume of forty pages entitled *Eternity* contains an essay by William M. Bryant, of the St. Louis high school reprinted from the pages of the *Unitarian Review*. The author gives the history of the development of his ideas on this subject, and in so doing states the positions held by the most prominent modern philosophers. (S. C. Griggs & Co., Chicago.)

*Arithmetic by Grades*, for inductive teaching, drilling, and testing, was prepared under the direction of that noted educator John T. Prince. It includes numbers from 1 to 20, is intended for the use of pupils of the first or second school year, and is designed to accompany and follow teaching by objects. The illustrations give graphic and orderly representations of what has been taught and serve as models for the pupils in the solution of problems. The problems are numerous and various and such as will answer the needs of pupils during the various stages of their progress. The method of teaching and using this book is given in the Teachers' Manual, designed to accompany all books of the series. (Ginn & Co., Boston.)

The more intimate and domestic life of so reclusive a man as Whittier has always a great fascination for all who are familiar with his works. He gives sparingly of himself in his poems; there may be rare confessions of moods, but such glimpses are only a stimulus to greater thirst for knowledge of the man. We like to know how he appears to his few near friends, how he talks when seated before an open fire, when confidences are invited and

hearts are opened. We like to know of his kindly opinions of people, his sly sallies of humor, his every-day habits. The poet was a frequent visitor at the house of ex-Governor Claflin and Mrs. Claflin who had unusual opportunities of knowing him in the most domestic and home-like way, has prepared a volume of *Personal Recollections of John G. Whittier*. The volume is an 18mo. of 95 pages and is enriched with two beautifully engraved portraits. It is prefaced by a beautiful poem by Miss Edna Dean Procter, one of Whittier's few intimate friends. (T. Y. Crowell & Co., New York and Boston. 75 cents.)

One hopeful sign at the present time is that more attention is given to practical studies. While music and painting and French are good, man's happiness depends on the condition of the home, and the knowledge of those things that conduce to its improvement should be placed first. We have before us a text-book on *Domestic Economy*, by F. T. Paul, F. R. C. S., intended for training colleges, schools, and nursing institutions, and as a domestic book of health. It is a thoroughly practical book, as may be seen from the topics treated. With physiology as a basis, the author proceeds to the consideration of foods and their values, clothing and sanitation, including air, ventilation, heating, lighting, water supply, and the removal of waste matters. There are ninety-six illustrations, some of them colored. It is an excellent book for the school or the home. (Longmans, Green & Co., London and New York. 75 cents.)

The fact that women are taking a more active part in business affairs than they once were renders it very necessary that they should know at least the elements of law. Most of them have not the time to read such voluminous works as Blackstone. They want something concise and comprehensive. They will find it in the volume of *Lectures on Law for Women*, delivered at the University of the City of New York, by Isaac Franklin Russell, D. C. L. The material in this book was of course greatly expanded in the lectures before the classes. It required a great deal of condensation to bring all the important matter within the compass of one hundred and eighty-three octavo pages. Nor must it be imagined that it makes altogether dry reading. The author's manner of treatment of different subjects is very interesting; and he considers all the main points from international law down to the laws regarding employer and employe, husband and wife, etc. The book is bound neatly and substantially in sheep. (New York Economical Printing Co., 24 Vesey street.)

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### Literary Notes.

—D. Lothrop Company announce *Little Children in the Church of Christ*, by Rev. Charles Roads. The book is a help toward the development of the little ones in the church; for the use of pastors, superintendents and teachers, Christian Endeavor circles, and all who are interested in the kindergarten of the church.

—D. C. Heath & Co. have admitted to partnership Mr. W. S. Smyth, for many years so widely and favorably known as the manager of the Western office of Ginn, Heath & Co., and afterwards of Ginn & Co. Mr. Smyth brings to the new connection an exceptionally wide acquaintance with school and college men, and an enviable reputation as a just and fair-minded business man.

—*The Bronte Family*, by Dr. William Wright, will be published by D. Appleton & Co., with illustrations. It will prove a work of absorbing interest, and one which will be indispensable for those who wish to understand the influences which directed the development of the Bronte sisters.

—Ginn & Co. will publish Collar's *Shorter Eyesnack*, about September 15, a book that will aid pupils to obtain a grasp, in the least possible time, of the German language. Prof. Boyesen highly recommends it.

—D. C. Heath & Co., Boston, have just issued *Lange's Apperception*, translated from the German by President De Garmo, of Swarthmore college, and other members of the Herbart club.

—Harper & Brothers announce the publication of General Wallace's book, *The Prince of India*.

—The *Critic* announces that the Cassell Publishing Company has been reorganized, with most of the former stockholders and some new ones. William L. Mershon, of the Mershon Press, Rahway N. J., has resigned from his active connection with the latter concern to become president and general manager of the new house. The company's capital is placed at \$250,000, (5,000 shares of the value of \$50 a share). Business will be begun with \$100,000, or 3,800 shares of paid-up stock. Most of the old employees will be retained, and there is every reason to believe that the concern has a long and vigorous life before it.

—A graceful souvenir of the visit of the Princess Eulalie to this country appears in the September number of *Demorest's Family Magazine*,—the World's fair number.

#### During the Teething Period.

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### Magazines.

—The great topic of the day—the silver question—has the first place in the September *Popular Science Monthly*. Under the title "Why Silver Ceases to be Money," Prof. F. W. Taussig, of Harvard university, will show that the high price of silver hitherto has depended largely upon legislation, and that certain growing tendencies have caused its recent great fall. He points out also the prospects for the future use of the white metal as money.

—Thirty-seven poems make up the quota of *Current Literature's* poetry in the September number. Special care seems to have been taken in their selection which has been on a basis of merit alone, not of blind following of mere names in literature.

—In the September number of *Harper's Magazine* the readers of Dr. A. Conan Doyle's latest historical novel, "The Refugees," will be particularly attracted to an article taking up the career of that picturesque and prominent character in Dr. Doyle's novel—Daniel de Gressillon, Sieur du Lhut, or Dulhut. The author is Mr. William McLennan, and the elaborate illustrations are furnished by Mr. Reinhart.

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